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SYMBOLS USED IN MUSIC ANALYSIS.
BY- JONES, GEORGE T.
CATHOLIC UNIV. OF AMERICA, WASHINGTON, D.C.
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A RECOMMENDED STANDARDIZED SYMBOLIZATION RESULTED FROM A DETAILED COMPARATIVE STUDY OF ANALYTICAL SYMBOLIZATION AND TERMINOLOGY FOUND IN MUSIC THEORY AND HARMONY TEXTBOOKS WHICH WERE IN GENERAL USE IN THE UNITED STATES. OVER 200 MEMBER SCHOOLS OF THE NATIONAL ASSOCIATION OF SCHOOLS OF MUSIC PROVIDED DATA ON MATERIALS. ABSTRACTS SHOWING SYMBOLIZATION WERE PREPARED FOR EACH OF MORE THAN 40 TEXTBOOKS. WHERE A CONSENSUS INDICATED A PREFERRED SYMBOLIZATION, THIS WAS THE ONE USUALLY RECOMMENDED. IN OTHER CASES, ALTERNATIVE SYMBOLIZATIONS WERE CONSIDERED AND THE ONE RECOMMENDED WAS THE CLEAREST, LEAST AMBIGUOUS SYMBOL WHICH STILL CONVEYED ACCURATELY WHAT HAD TO BE EXPRESSED. RECOMMENDATIONS COVERED THE FIGURED BASS, CHORD SYMBOLS, NONHARMONIC TONES, AND THE CHORD SYMBOLS IN POPULAR MUSIC. (JM)

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Cooperative Research Project No. 2049

George Thaddeus Jones

The Catholic University of America

Washington, D. C.

1964

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PREFACE

On June 15, 1963 a grant was awarded by the Office of Education U. S. Department of Health, Education, and Welfare to The Catholic University of America for a research project to be known as, SYMBOLS USED IN MUSIC ANALYSIS, and to be conducted by George Thaddeus Jones of the Music Department faculty.

The Principal Investigator made interim reports to the Government on the progress of this investigation on November 15, 1963 and on May 15, 1964. This final report terminates the contract and presents the final results of the investigation.

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The author wishes to gratefully acknowledge the cooperation of the following authors and publishers who so generously gave permission for quotations from their copyrighted works to be used in this report.

Alchin, Carolyn A. *Applied Harmony*. Part 1 & 2. Hollywood, California: Highland Music Co., Part 1 - 1959, Part 2 - 1930.

Benward, Bruce & Seagrave, Barbara Garvey. *Practical Beginning Theory*. Dubuque, Iowa: Wm. C. Brown Co., Publishers, 1963.

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INTRODUCTION

The scope of this study can best be defined by briefly discussing the problem of music analysis in general. There are some who hold the opinion that the "analysis" of music, whatever is meant by this term, is an invalid term and process. This view holds that music should be perceived directly as music and should not have to be "explained" by words or symbols. Contrary to this point of view we find, in most music schools today, courses being offered with titles such as Form and Analysis, Analytical Techniques, Music Literature, etc. Apparently these courses are based upon the belief that some better understanding of music can be achieved, not only by listening to the music directly, but also by study, discussion, analysis and synthesis. It has been the author's experience, in offering such courses at the college level over a period of years, that the perception and understanding of a given composition can be deepened by allowing the mind of the listener to cope with the problems of the musical design in terms of words or symbols, as well as listening directly to the music.

For this kind of discussion and examination of the music to take place an adequate vocabulary of words and symbols is required which have known and commonly accepted meanings. The concepts which are generally used in this type of analysis are commonly understood where these concepts are expressed in words. When symbols are used to express these concepts, as a kind of musical shorthand, there is something less than universal agreement on the symbolization. For example, if one says, "the dominant seventh chord in the key of C minor," this conveys an idea which is commonly understood. On the other hand, the symbolization of this concept in harmony and theory books in general use would show considerable latitude of detail. $\mathrm{V}^{7}_{\substack{\sharp\\7}}$, $\mathrm{V}^{7}_{\sharp 3}$, $\mathrm{V}^{7}_{\natural}$, V^{7}_{3}; these four versions of the same concept are sometimes confusing even to the experienced musician, and for the inexperienced are difficult.

This report, after studying what symbols are currently in use, recommends a standardized symbolization for the analysis of tonal music. This symbolization is suitable for all commentary on music where staff notation is not feasible.

PART I. THE RESEARCH PROJECT

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I. THE PROBLEM: THE DIVERSIFICATION OF SYMBOLS USED IN MUSIC ANALYSIS

It is obvious to any musician who has occasion to use books on harmony or music theory, that there is a general lack of agreement in symbolizing the analysis of tonal music. Just why there is no better agreement on this rather vital aspect of theory is difficult to determine. That the situation has persisted for as long as it has without some general consensus being reached is due, I believe, to three factors. First, we do have some general agreement upon two basic ideas, the Arabic figures from the traditional figured bass, and the use of the Roman numeral to indicate chord function. Second, the details which surround the Roman numeral symbol - and this is where the lack of uniformity usually occurs - can often be deciphered, provided one uses some common sense and is willing to take the necessary time to do this. Finally, the use of what might be called the Schenker graph, and the general use of words rather than symbols, has made it possible to discuss music and to avoid the use of all but the most elementary symbols.

It should be clear from the foregoing paragraph that this study is concerned only with those symbols which are generally used by musicians in discussing or analyzing a musical composition, and not with the symbols used for the notation of music on a staff. The study seeks to establish some uniformity in the use of the symbols and terms which are usually encountered in harmony or theory texts or in the discussion of tonal music by analysts or musicologists.

We seem to have arrived at, in the middle of the twentieth century, a critical time in the evolution of tonality. Perhaps it is time now for us to attempt to standardize the symbolization of analytical concepts used for the conventional type of tonal organization based upon triadic harmony. That new developments are taking place is abundantly clear, and perhaps some new type of organization may develop which is not based upon the natural sonority of the overtone series. However, this study is not concerned with speculative hypotheses, nor even with various systems of analysis. It is concerned with an attempt to standardize symbols and terminology which may be used in all or in many different systems of analysis.

The author is aware that seeking uniformity among the diverse analytical symbols now in use is an enormously difficult task. Should one person attempt this? Should this be entrusted to a committee of "experts"? What criteria are to be used in deciding between two symbols?

In trying to answer questions such as these, I have taken the position that a beginning must be made somewhere and that this study may in turn lead to others. It is certain on the face of the matter that, whatever suggestions are made toward standardization, these will be received with criticism by those who champion another point of view. This seems to be unavoidable. My reasons for recommending one symbolization over another will be clearly given, and those interested in this problem are free to agree or disagree with my suggestions. At least the problems will be brought out into the open where some general consensus may then be found.

That there is a real need for us to make this attempt at agreement on symbolization is perhaps most clear to those in education who are faced with the daily problem of teaching young musicians a "correct," or at least meaningful, way to cope with these matters. A class in tonal harmony or in analysis needs terms and symbols in addition to the staff notation in order to discuss and express musical concepts. It is useless to say that the music speaks for itself as pure music. The whole literature of music theory, commentary and analysis involves expressing musical concepts in terms other than the musical sound itself. If we can find agreement here, the work in education and musicological studies will be enormously facilitated and clarified.

II. OBJECTIVES

The objectives of this study are twofold:

1. To make a detailed, comparative study of the analytical symbolization and terminology found in the music theory and harmony textbooks which are in general use in the United States.
2. On the basis of this study to recommend a standardized symbolization which will be useful in music schools and for musicological research.

The publication of this report will in itself achieve a secondary objective: it will be useful as a single reference source which can be consulted by musicians and teachers to clarify an unknown symbolization or to discover how various theorists and authors have symbolized a particular concept.

So far as this author has been able to discover there has been no previous attempt to deal with this problem. There have been related studies into some aspects of the problem which will be mentioned later, and there have been attempts by authors to suggest specific systems of analytical terminology which they would like to see generally adopted, but apparently there have been no previous attempts to study the entire field to discover the common ground of the many approaches now in use.

III. PROCEDURE

In order to discover the theory books which were in general use in the United States, a questionnaire[1] was sent, in May, 1963, to the 262 member schools of the National Association of Schools of Music.[2] This letter requested a listing of the theory and harmony books which each school currently used. In September, 1963 a follow-up letter was sent to those schools not replying to the first. These two letters produced 228 replies, a return of 87 per cent of the 262 schools contacted.

The teaching materials which were listed on these replies were divided into the following three categories:

(a) commercially published theory and harmony textbooks.

(b) commercially published books of other theoretical disciplines such as, sight-singing, ear-training, solfeggio, keyboard harmony, counterpoint, orchestration, analysis, history and form.

(c) duplicated or privately printed materials.

The books in the first category (a) were chosen for this study and those falling in categories (b) or (c) were eliminated for the following reasons. It was felt that the theory and harmony books, and possibly those dealing with analysis, would be the best source of symbolization. Books on counterpoint, orchestration, etc., might utilize some analytic symbolization at times or for some particular purpose but such symbolization might not be as complete as that shown by the harmony texts.

---

[1] This, and samples of other pertinent correspondence, will be found in the Appendix.

[2] The 1963 List of Members published by the NASM included 230 schools as Full Members and 32 schools admitted to Associate Membership, as of January, 1963.

All of the original manuscript material, whether duplicated by mimeograph, ditto, multilith, photo-offset or printed privately was carefully studied. This material was sent by the individual authors to this investigator or it was purchased from individuals or campus stores. After a careful study of this material, it was decided not to include it in the study, principally because it had limited circulation and therefore less influence than the material published by nationally known and established firms.

Two additional points were considered: the fact that not all music schools were members of the NASM and therefore were not contacted in the survey, and the possibility that an individual teacher might use an original symbolization different from any printed material. These two points were finally dismissed in the belief that the printed textbooks in use in the NASM member schools would give a reasonably accurate and fair picture of the analytic symbolization currently in use in the United States.

Where two books were in use by the same author, as for example Harmony and Harmonic Analysis by Walter Piston, only one was studied since the symbolization was the same in both. By this process of elimination a list of thirty-nine theory texts was arrived at. These texts are listed in the following chart according to their frequency of use. Since many schools listed several books, the totals cannot be compared to the total number of schools replying (228). Title abbreviations are used throughout the report; the complete title of each book, and the publisher, will be found in the Acknowledgments.

THEORY TEXTS USED IN 228
SCHOOLS OF THE NASM

Book	Number of Schools
Frequency - 10 or more schools	
Piston (H)	91
McHose 49 (CHT) + 26 (BP)	75
Ottman (E, AH)	47
Kohs (MT)	18
Hindemith (TH)	15
Forte (TH)	13
Persichetti (TCH)	11
Wedge (AH)	11
Heacox (HEEK)	10
Sessions (HP)	10
Frequency - 5 to 9 schools	
Dallin (TTCC)	8
Elliott (FM)	8
Laycock & Nordgren (FYMT)	7
Murphy & Stringham (CHM)	7
Reed (BM)	7
Bockmon & Starr (PM)	6
McKinley (HR)	6
Robinson (PH)	6
Salzer (SH)	5
Frequency - Less than 5 schools	
Smith & Krone (FM)	4
Boatwright (ITM)	3
Foote & Spalding (MA)	3
Alchin (AH)	2
Cass (RM)	2
Chadwick (H)	2
Dallin (FMT)	2
Schoenberg (TH)	2
Benward & Seagrave (PBT)	1
Bigelow (CATM)	1
Bussler (PH)	1
Castellini (RM)	1
Cutter (HA)	1
Goetschius (MUMC)	1
Hanson (HMMM)	1
Macpherson (MH)	1
Mitchell (EH)	1
Ratner (H)	1
Tapper (FSYH)	1
Thostenson (FHM)	1

To this list four books were added to make the basic list of forty-three texts which will be found in the Table of Contents. Practical Harmony by Tischler and Music Composition by Jones were published shortly after the questionnaire was returned by the schools, and it seems likely that they would have appeared on the list had they appeared earlier. Manual of Harmonic Technique by Tweedy is an older harmony book which was added to the list because of some unique ideas of symbolization which are found in no other book. Because of the growing interest in the ideas of Heinrich Schenker, that author's Harmony was also added.

Finally, some of the forty-three books studied have been designated as Special Area Books (SAB). These are books which cover some special area of theory, rather than that usually covered by a conventional harmony course. Examples of SAB books would be Persichetti's Twentieth-Century Harmony, Dallin's Techniques of Twentieth-Century Composition, or Hanson's Harmonic Materials of Modern Music, etc.

After the list of the forty-three books was made, a detailed abstract of each book was then undertaken to discover how each book symbolized each basic musical concept. The basic concepts were categorized in the following way; each book digest follows this outline.

A. Figured bass
    1. Triads and inversions
    2. Seventh (ninth, etc.) chords and inversions
    3. Altered tones
    4. Nonharmonic tones
B. Chord symbols
    1. Key indication
    2. The Roman numeral chord symbol (triads)
    3. Inversions
    4. Seventh (ninth, etc.) chords and inversions
    5. Altered tones
    6. Modulation

C. Nonharmonic tones
    1. Definitions and examples
    2. Abbreviations

D. Chord symbols used in Popular Music or Jazz

This outline of categories covers all of the points of symbolization which are usually found in theory books. The Special Area Books, because of their limited scope, did not always cover all of these points, and in these cases only the symbolization used was reported in the book abstract.

There are only a few modern theory books that devote any discussion to the chord symbols found in popular sheet music or jazz orchestrations, so another source for this symbolization had to be found. Twelve leading publishers of popular songs were contacted and asked to submit samples of recent songs for study. The results of the study in this area are reported under a separate heading.

After an abstract had been made of all forty-three theory books showing how each concept was treated, a comparative table was then made for the first twenty books. These twenty books are the ones which are most widely used and therefore are the most influential and important. The chart shows at a glance how each concept is symbolized in each book.

Finally, after this investigation of what symbols were in current use, it was then necessary to make recommendations for standardization. The specific considerations which entered into each decision are given below under each category; however, the two general bases for choosing one symbolization over another were:

1. Where a general consensus among many texts indicated a preferred symbolization, this is the one which was usually recommended.

2. Where no clear preference for a particular symbolization was found, all alternative symbolizations were considered and the one recommended which, in the opinion of this author, was the clearest, least ambiguous symbol which still conveyed accurately what had to be expressed.

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PART II. A SURVEY OF THE SYMBOLIZATION FOUND IN MUSIC THEORY TEXTBOOKS IN GENERAL USE IN THE UNITED STATES

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I. THE SURVEY

The theory texts which are studied are arranged in this section in alphabetical order by author. The complete titles of the texts will be found in the Acknowledgments. The frequency of use of each text as reported by the 228 NASM schools in the questionnaire will be found in a chart on page 11.

In general, when each text is discussed, the terminology, spelling, etc., which is found in the text is retained here. For example, some books speak of nonchord tones, others non-harmonic tones and others nonharmonic tones.

In the matter of consistency in the use of symbols within a text, several problems occurred. The same concept was sometimes symbolized in more than one way within the same book. Some cases were obviously typegraphical errors and when this investigator thought that this was the case, the error was corrected without comment. When an inconsistency occurred several times in a text--suggesting that the author had no strong feelings about a point, or felt that it was inconsequential--it was more difficult to know how to report this. For example, there were several texts in which discrepancies occurred in the placement of figured bass Arabic numerals in relation to the Roman numeral chord symbol. In the same text one might find V^6, V6, or V_6 suggesting that the placement of the figures was unimportant to the author or that the copyist had made a mistake which went unnoticed. In these cases the version of the symbol which seemed to be most prevalently used throughout the text was taken as the norm.

In printing the abstracts, I have adopted the practice of placing the author's name on each page so that the symbolization being described can be easily related to the particular book without referring back to the beginning of the abstract.

The format used in the Ottman books to present the definitions of nonharmonic tones seemed to this author to be the clearest presentation of this subject, so a modified version of this format was adopted for all of the texts when this was feasible.

Since the order in which the symbols are discussed remains the same for each abstract--following the outline given on page 8--it is possible to locate quickly the same concept in several books for purposes of comparison.

In order to give an overview of the most important books, a chart was devised in which the symbolization found in the first twenty texts can be seen on one double page. Similar charts were made to show the recommended symbolization for general use and for the popular music field. These charts will be found at the end of the sections which detail how these conclusions were reached.

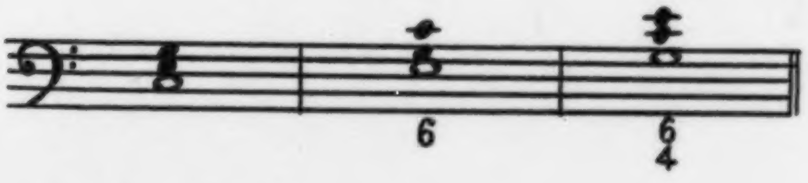
ALCHIN (AH)

A. Figured Bass

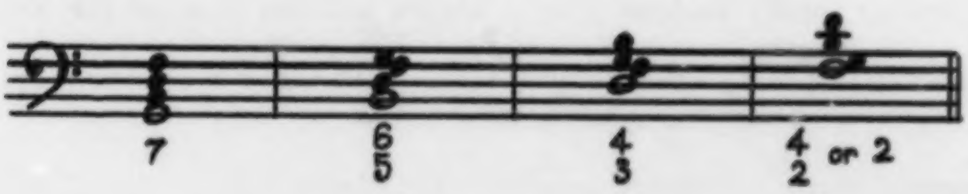
Conventional figured bass is discussed briefly in Chapter IX and the student is referred to a more detailed treatment in the Appendix. However, there are very few exercises of figured bass given for student solution. The most complete examples occur in the Appendix.

Arabic numerals are placed below the bass part.

1. Triads and inversions

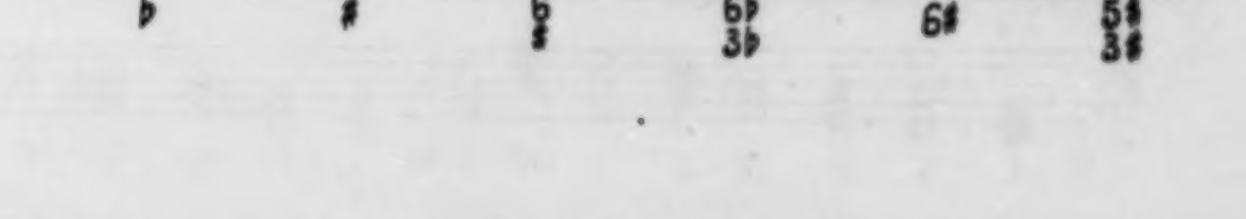


2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

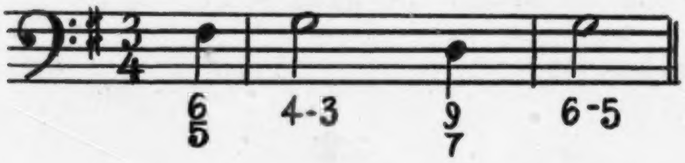
   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals follow the figure affected.
   c. The slanting stroke (6̸) is not used.



ALCHIN (AH)

4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. Figures connected by a short dash indicate that the melodic motion takes place in the same voice.



B. Chord Symbols

The student is given three different ways to symbolize chords; these are explained under 3a., b., c., and 4a., b., c. below. The author seems to prefer 3a. and 4a.

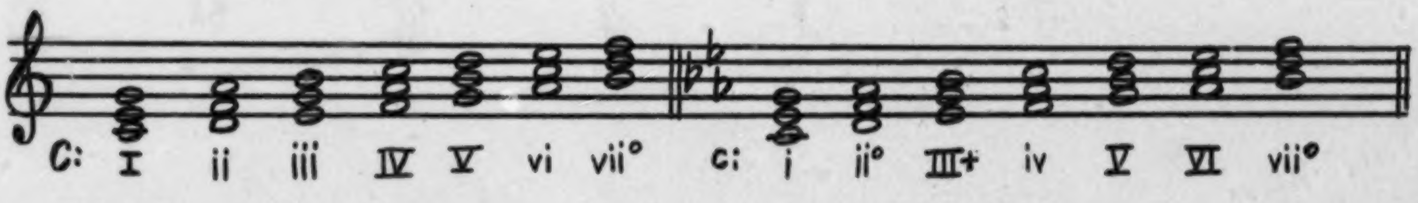
1. Key indication

   a. A capital letter followed by a colon indicates a major key.
      C: B♭: F♯:
   b. A small letter followed by a colon indicates a minor key.
      c: b♭: f♯:

2. The Roman numeral chord symbol (triads)

The quality of each triad type is shown by the Roman numeral symbol as follows:

   a. A large Roman numeral indicates a major triad.
      I V
   b. A small (lower-case) Roman numeral indicates a minor triad.
      ii iii
   c. A large Roman numeral followed by a plus sign (+) indicates an augmented triad. III+
   d. A small Roman numeral with a circle at the upper right indicates diminished triad. vii°



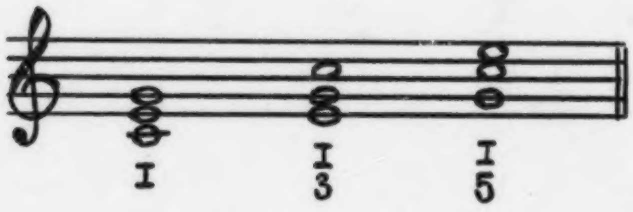
   e. The triad on the seventh scale degree (vii°) is called the subtonic, but it may also be referred to as "an incomplete V^7."

ALCHIN (AH)

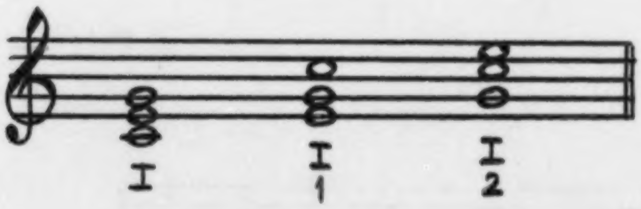
3. Inversions

Three different systems of indicating inversions are given, since the author says the student may encounter one or more of these in other textbooks. In the remainder of the book, the author seems to prefer system "a."

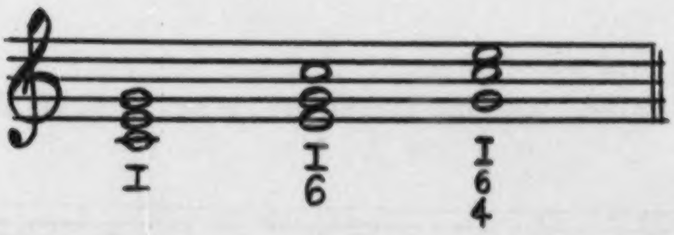
a. Arabic numerals placed beneath the Roman numeral show what part of the chord is in the bass (I, $\underset{3}{\mathrm{I}}$, $\underset{5}{\mathrm{I}}$).



b. Arabic numerals placed beneath the Roman numeral indicate which inversion is being used (I, $\underset{1}{\mathrm{I}}$, $\underset{2}{\mathrm{I}}$).



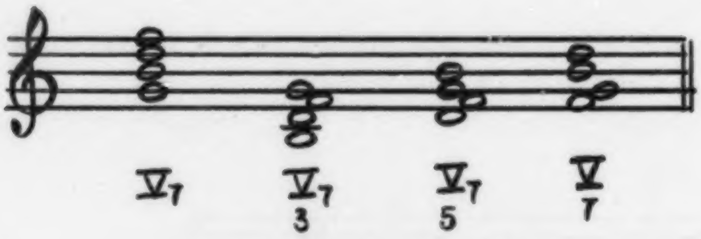
c. Arabic numerals placed beneath the Roman numeral indicate intervals sounding above the bass (traditional figured bass).



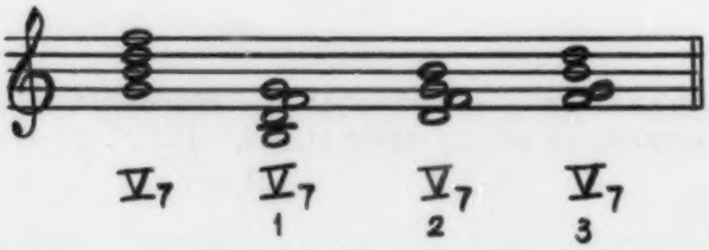
4. Seventh (ninth, etc.) chords

The same systems are applicable to the inversions of seventh chords. An Arabic seven placed to the lower right of the Roman numeral indicates a seventh chord.

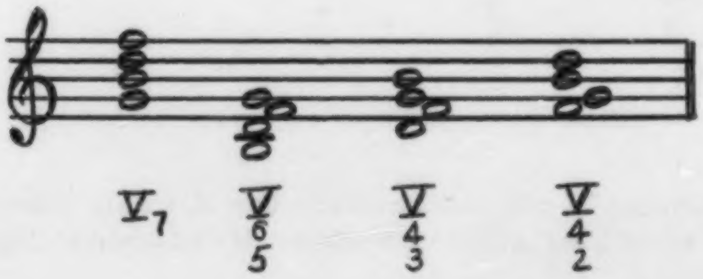
a.


V7
V7 3
V7 5
V 7

b.

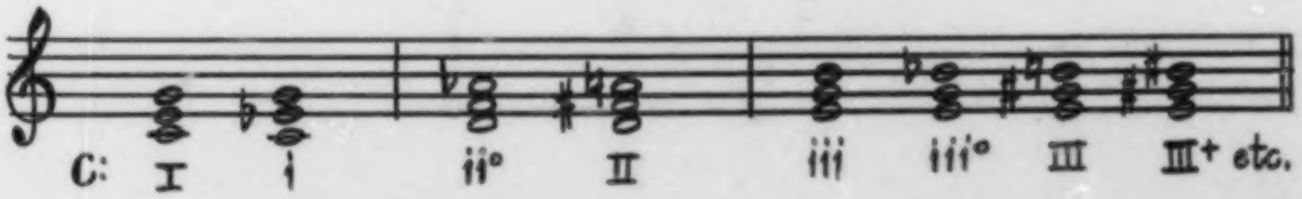

V7
V7 1
V7 2
V7 3

c.

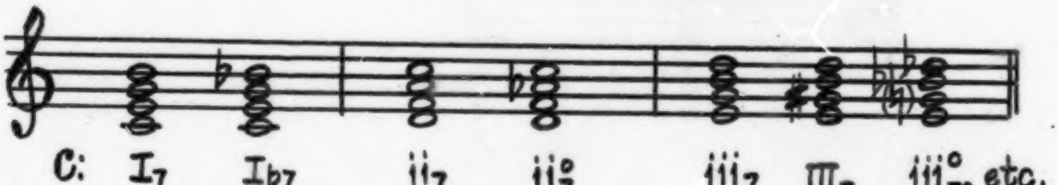

V7
V 6 5
V 4 3
V 4 2

5. Altered tones

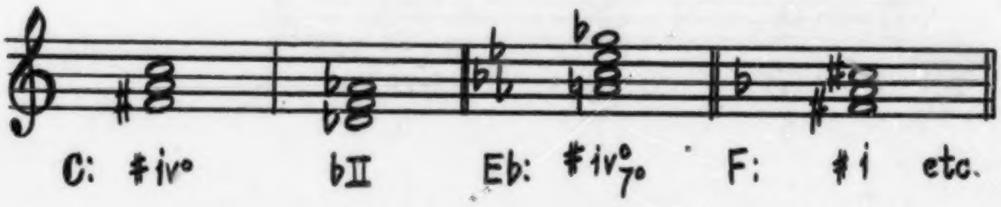
a. The type of triad is symbolized as described in B2. above.


C: I
i
ii°
II
iii
iii°
III
III+ etc.

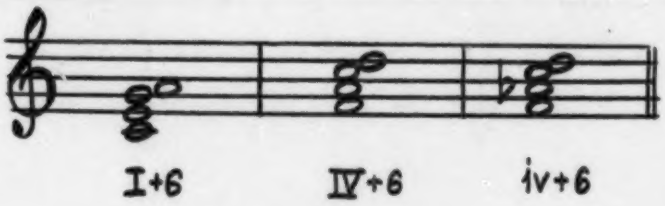
b. The seventh added to any of the four types of triads is diatonic unless an alteration is shown. A flat means lowered, a sharp means raised, a circle means diminished.


C:
I7
Ib7
ii7
ii°7
iii7
III7
iii°7° etc.

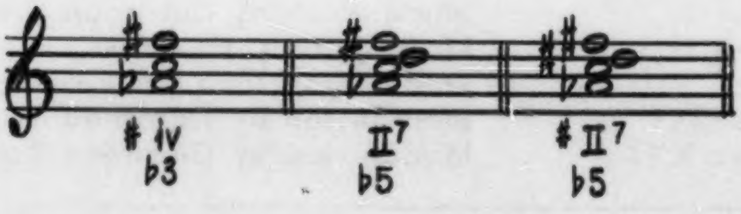
c. The root of a chord is raised or lowered by placing a sharp or flat in front of the Roman numeral.


C: #iv°
bII
Eb: #iv°7°
F: #i
etc.

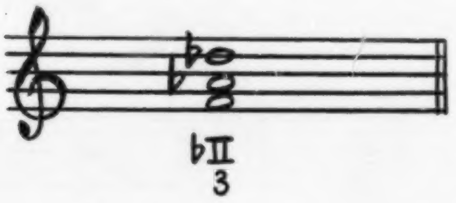
d. The chord of the added sixth is symbolized:



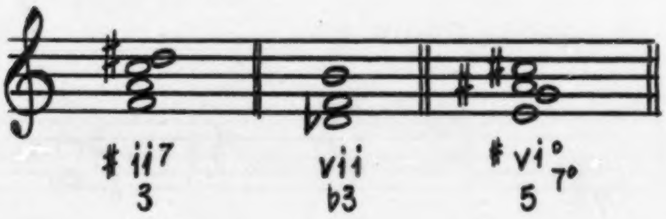
e. The Italian, French and German augmented sixth chords are symbolized:


#iv
b3
II7
b5
#II7
b5

f. The Neapolitan sixth chord is:

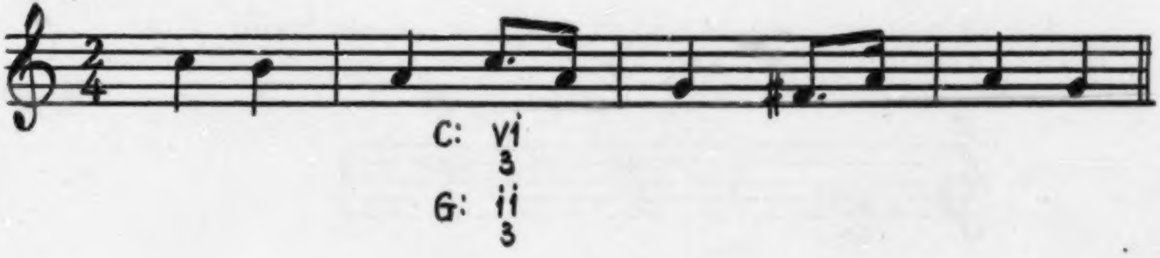


g. In addition to showing the quality of the triad, the seventh, and any other alteration, the inversion of the chord is indicated by the 3 or 5 placed under the symbol.



6. Modulation

In Part I, pivot chord modulation is symbolized: (Part I, page 154-Ex. 209)[1]



In Part II, which deals with modulation and chromatic harmony there are five chapters with the following self-explanatory titles:

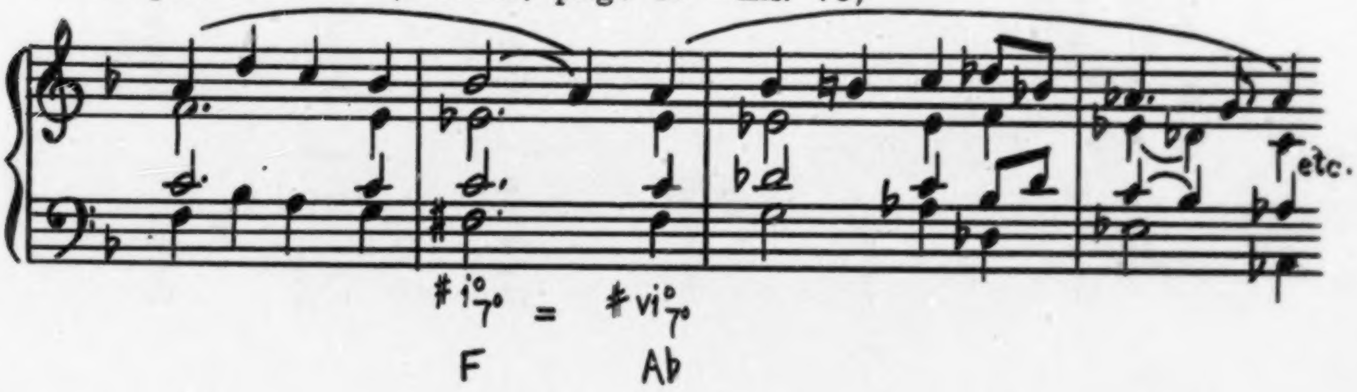
Chapter I	Modulation by Common Chord
Chapter II	Modulation thru vii$^{o}_{7}$o
Chapter VIII	Modulation thru Chromatic Chords
Chpater XV	Modulation by Common Tone
Chapter XVI	Modulation by Common Tone (cont.)

---

[1] Carolyn Alchin, Applied Harmony - Part I (Hollywood, Cal.: Highland Music Company, 1959). Used by permission.

ALCHIN (AH)

The only additional symbolization used is shown in the following example where the equal sign is used to show the dual interpretation of the pivot chord. (Part II, page 40 - Ex. 78)[1]



C. Nonharmonic Tones

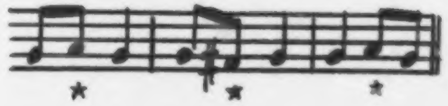
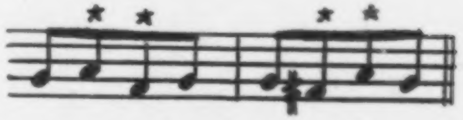
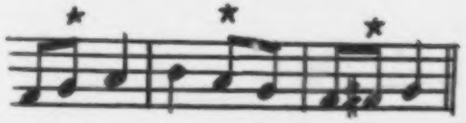
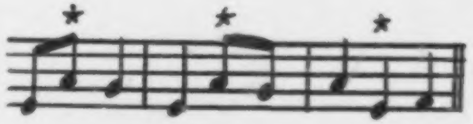
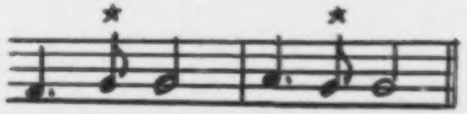
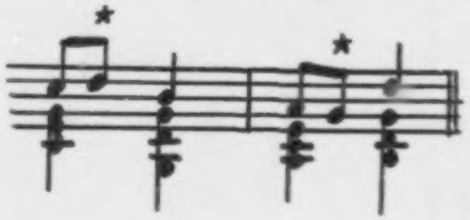
Melodic decorations which are not a part of a chord are referred to collectively as bytones (or non-chordal tones). They are then discussed individually under the following categories:

---

[1] Carolyn Alchin, Applied Harmony - Part II (Hollywood Cal.: Highland Music Company, 1959). Used by permission.

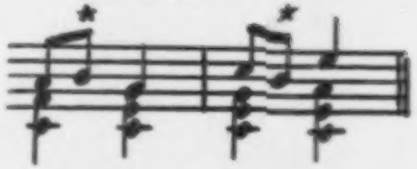
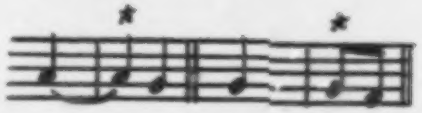
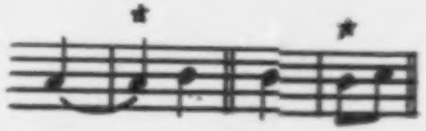
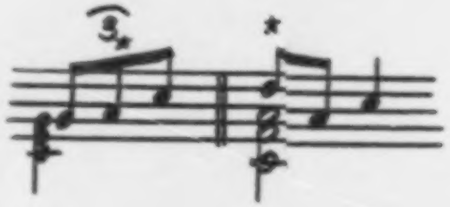
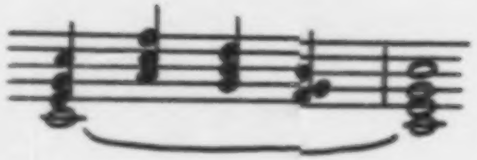
ALCHIN (AH)

C. Nonharmonic tones (Bytones or non-chordal tones.)

Name	Abbreviations	Examples	Approached	Left	Direction of Resolution
Auxiliary tones Unaccented or Accented	None used		By step	By step	Opposite to approach
Changing tones			Step-skip-step		
Passing tones Unaccented or Accented			By step	By step	Same as approach
Appoggiatura Unaccented or Accented			By skip	By step	Opposite to approach
Anticipation Unaccented			By step	Repeated tone	Same tone
Free Anticipation Unaccented (Anticipates a note in another voice)			By step	By skip	Opposite to approach

ALCHIN (AH)

C. Nonharmonic tones (cont.)

Name	Abbreviations	Examples	Approached	Left	Direction of Resolution
Free tone (Not in the following chord)	None used		By step	By skip	Opposite to approach
Suspension			Tied or repeated tone	By step	Down
Retardation			Tied or repeated tone	By step	Up
Added Sixth					
Pedal Point			Held tone - Part of first and last chords		

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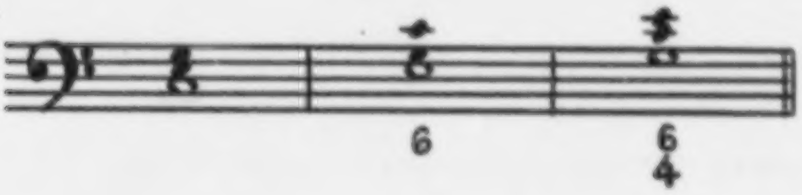
BENWARD & SEAGRAVE (PBT)

This is a book for a beginning theory course. Since it is only concerned with theory and beginning harmony, it does not encounter some of the advanced problems of symbolization concerned with altered chords, etc.

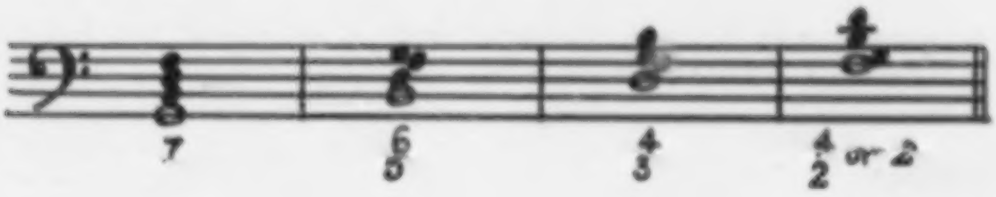
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions

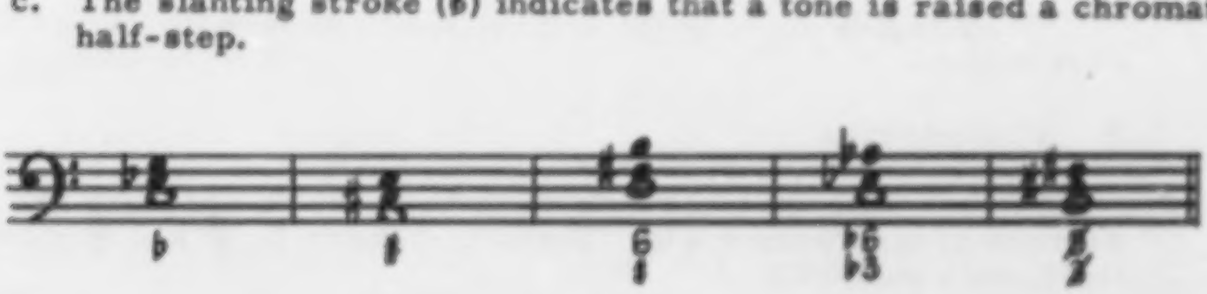


2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals precede the figures affected.
   c. The slanting stroke (6̸) indicates that a tone is raised a chromatic half-step.



4. Nonharmonic tones

There are no figured bass examples which show nonharmonic tones in the figuration.

BENWARD & SEAGRAVE (PBT)

B. Chord symbols

1. Key indication

a. A major key is shown by writing out the following:
C Major:
b. A minor key is shown by writing out the following:
A Minor:

2. The Roman numeral chord symbol (triads)

The quality of each triad type is shown by the Roman numeral symbol as follows:

a. A large Roman numeral indicates a major triad.
I V
b. A lower-case Roman numeral indicates a minor triad.
ii iii
c. A large Roman numeral followed by a plus sign (+) at the lower right, indicates an augmented triad.
III_{+}
d. A lower-case Roman numeral with a circle at the lower right indicates a diminished chord.
vii_{o}

3. Inversions

Arabic numerals from figured bass are placed at the upper right of the Roman numeral.

I^{6} i^{6}_{4} III^{6}_{+} vii^{6}_{o} ii^{6}_{o}

4. Seventh (ninth, etc.) chords

A seven is added at the upper right of the Roman numeral.
V^{7}

No examples showing the symbolization of seventh chords in inversion were found.

5. Altered tones

The only altered tones symbolized are the raised sixth and seventh degrees of the minor scale. These are shown by $\overset{\sharp}{6}$ and $\overset{\sharp}{7}$ placed below the Roman numeral.

$\underset{\overset{\sharp}{6}}{\mathrm{ii}}$ $\underset{\overset{\sharp}{6}}{\mathrm{IV}}$ $\underset{\overset{\sharp}{7}}{\mathrm{V}}$ $\underset{\overset{\sharp}{7}}{\mathrm{vii}}_{o}$ $\underset{\overset{\sharp}{7}}{\mathrm{III}}_{+}$

If these are inverted the figured bass numeral is added to the chord symbol at the upper right.

$\underset{\overset{\sharp}{6}}{\mathrm{IV}}^{6}$ $\underset{\overset{\sharp}{6}}{\mathrm{V}}^{6}$ $\underset{\overset{\sharp}{7}}{\mathrm{III}}^{6}_{+}$

BENWARD & SEAGRAVE (PBT)

In the case of the inverted leading tone triad, the raised tone in an upper part is shown by a line through the $\not{6}$.

$$\text{vii}^{\not{6}}_{o}$$

6. Modulation

Three kinds of modulation are distinquished:

a. Modulation by phrase:

A phrase may end in one key and be followed by a phrase beginning in a new key. This is symbolized by showing the two keys.

G Minor: V i G Major: I

b. Common chord modulation:

The chord common to the two keys is given a dual analysis.

$$\begin{array}{r}\text{D Major: I}^6\\ \text{A Major:}\end{array}\left\{\begin{array}{c}\text{vi}\\ \text{ii}\end{array}\right\}\begin{array}{l}\\ \text{V I}\end{array}$$

c. Chromatic modulation:

No common chord is shown; the analysis shows the old key and then continues in the new key.

B♭ Major: I ii^6 V G Minor: V^6 I

C. Nonharmonic tones

The term nonharmonic tone is used in this text to describe notes which do not belong to a chord, but no specific types are explained or identified.

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BIGELOW (CATM)

A. Figured bass

There are no figured basses given for student solution. The usual Arabic figures indicating inversions (6, $^{6}_{4}$) are used only in connection with the Roman numeral; these are placed directly below the Roman numeral.

B. Chord symbols

1. Key indication

   a. A capital letter followed by a colon indicates a major key.
   C: B♭: F♯:

   b. A small letter followed by a colon indicates a minor key.
   c: b♭: f♯:

2. The Roman numeral chord symbol (triads)

   The quality of each triad type is shown by the Roman numeral symbol as follows:

   a. A large Roman numeral indicates a major triad.
   I V

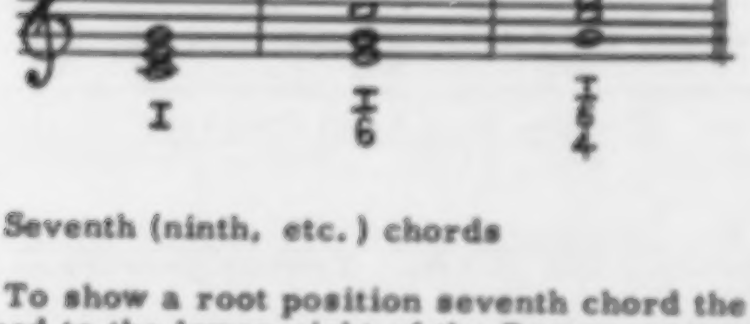
   b. A large incomplete Roman numeral, without the lower bar, indicates a minor triad.
   I II VI

   c. A large Roman numeral followed by a plus sign (+) indicates an augmented triad.
   III+

   d. A large incomplete Roman numeral, without the lower bar, and with a circle at the upper right indicates a diminished triad.
   II° VII°

3. Inversions

   The usual Arabic figures are placed directly below the Roman numeral to indicate inversions.

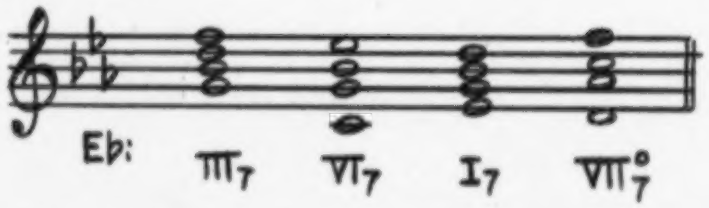


4. Seventh (ninth, etc.) chords

   To show a root position seventh chord the Arabic numeral 7 is placed to the lower right of the Roman numeral.

BIGELOW (CATM)

(CATM, page 103)[1]



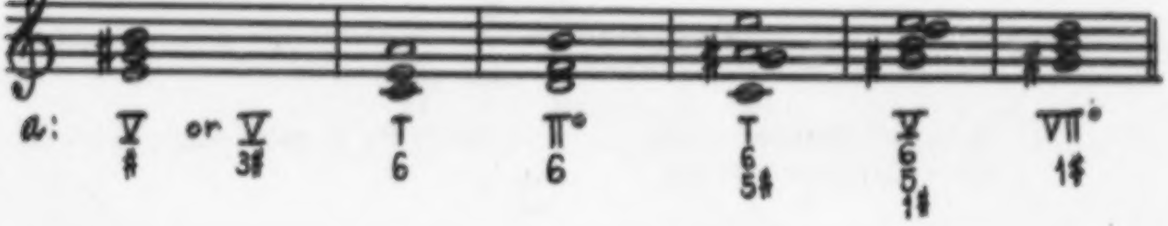
To show inversions the Arabic numerals are placed directly below the Roman numeral.

$$\overset{\mathrm{I}}{\substack{6\\5}} \quad \overset{\mathrm{VII}^{\circ}}{\substack{6\\5}} \quad \overset{\mathrm{IV}}{\substack{4\\3}} \quad \overset{\mathrm{VI}}{\substack{4\\2}}$$

5. Altered tones

Altered tones are indicated with the appropriate Roman numeral symbol as described above. These are modified by the following conditions:

a. An accidental without a figure refers to the third above the bass tone.
b. Accidentals follow the figure affected.
c. The slanting stroke ($\not{6}$) is not used.
d. If the bass tone is altered this is figured: 1♯



6. Modulation

In Book One there is no discussion of modulation; in Book Two, which is subtitled *Form in Melody*, there is a chapter called, "Melodic Modulation." The concept is explained (page 84): "The process of shifting tonality (or tonic) is called modulation."[2] This is discussed and illustrated but no special symbolization is employed.

C. Nonharmonic tones

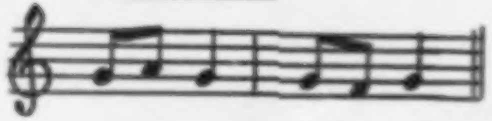
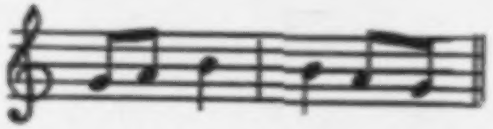
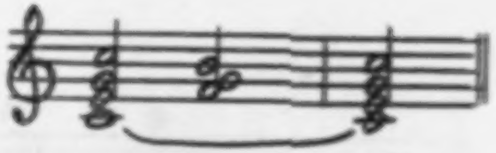
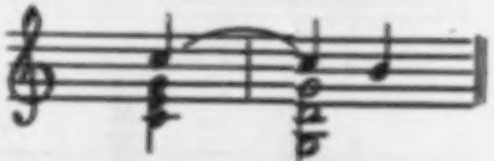
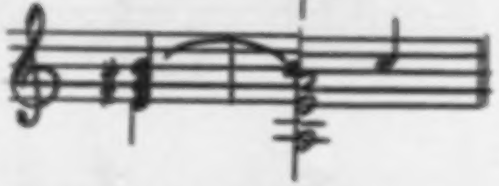
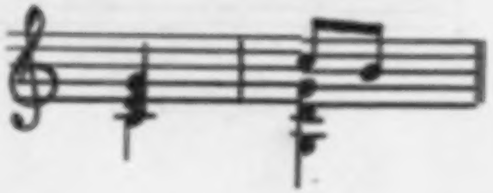
These are called "Non-chordal tones." The definitions and examples follow; note that both *suspension* and *retardation* are used.

---

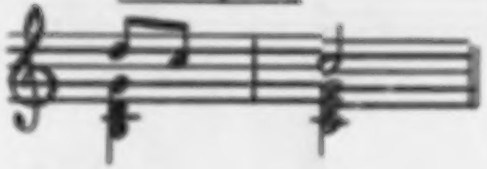
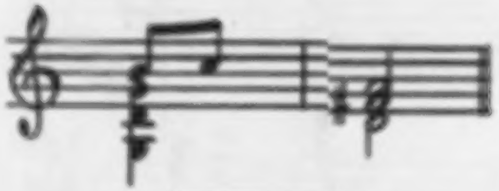
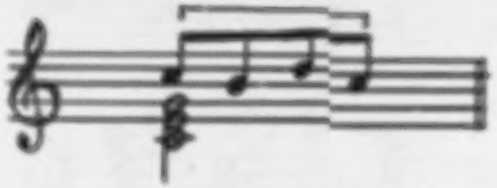
[1] Earl R. Bigelow, et al. *Creative Analytical Theory of Music*, Book One. (Chicago: H. T. FitzSimons Co., Inc., 1948). Used by permission.

[2] Earl R. Bigelow, et al. *Creative Analytical Theory of Music*, Book Two. (Chicago: H. T. FitzSimons Co., Inc., 1948). Used by permission.

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Neighboring tone	NT		By step	By step	Opposite to approach
Passing tone	PT		By step	By step	Same as approach
Pedal Point	ped.		Held tone		
Suspension	sus.		By same note	By step	Down
Retardation	ret.		By same note	By step	Up
Appoggiatura	app.		By skip	By step	Opposite to approach

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Anticipation	ant.		By step	By same note	Same note
Escape tone	ET		By step	By skip	Opposite to approach
Changing tones	CT		By step or skip	By skip or step	

BOATWRIGHT (ITM)

Special Area Book

For the purpose of this investigation this work must be counted as a Special Area Book. As the title states, this is an introduction to music theory. It is a book for the beginner which covers many things, among them, notation, rhythm and meter, intervals, scales, melody writing, elementary acoustics, orchestral instruments, sample orchestral scores and musical terms.

There is no use made of figured bass and no study of harmony; hence, the symbolization of harmonic functions and the definitions of nonharmonic tones are not included.

This would seem to be a very useful book for the beginning student with little or no knowledge of music, however, it does not contain any of the symbolization with which this investigation deals.

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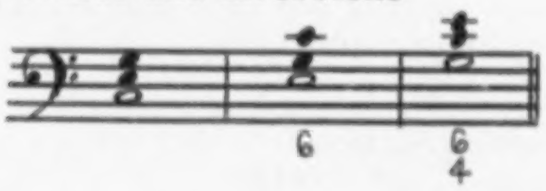
BOCKMON & STARR (PM)

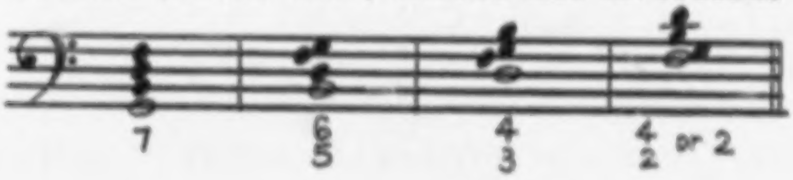
A. Figured bass

In this book, figured bass is not used except in connection with the Roman numeral symbol. There are no exercises of figured bass, as such, for the student to solve. The Arabic figures are explained, however, when inversions are discussed.

1. Triads and inversions



2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

No examples were found of the Arabic figured bass numerals showing an altered tone.

4. Nonharmonic tones

Except for the traditional names of suspension (4-3, 7-6, 9-8, 2-3), no examples were found where nonharmonic devices were expressed in terms of figured bass.

B. Chord symbols

1. Key indication

a. A capital letter followed by a colon indicates a major key.
C: B♭: F♯:

b. A small letter followed by a colon indicates a minor key.
c: b♭: f♯:

2. The Roman numeral chord symbol (triads)

The quality of each triad type is shown by the Roman numeral symbol as follows:

a. A large Roman numeral indicates a major triad.
I V

b. A lower-case Roman numeral indicates a minor triad.
ii iii

BOCKMON & STARR (PM)

c. A large Roman numeral followed by the plus sign (+) as a superscript indicates an augmented triad.

III^{+}

d. A lower-case Roman numeral followed by the circle (°) as a superscript indicates a diminished triad.

vii^{o}

3. Inversions

Inverted chords are shown by adding the usual Arabic figures to the right of the Roman numeral. These figures indicate only the chord inversion; they are not modified to show alterations.

$\mathrm{I} \quad \mathrm{I}^{6} \quad \mathrm{I}^{6}_{4}$

4. Seventh (ninth, etc.) chords and inversions

$\mathrm{V}^{7} \quad \mathrm{V}^{6}_{5} \quad \mathrm{V}^{4}_{3} \quad \mathrm{V}^{2} \quad \mathrm{V}^{9} \quad \mathrm{V}^{13}$

The "leading-tone" triad may be called an "incomplete dominant seventh," the "leading-tone seventh chord" may also be called an "incomplete dominant ninth." (page 166)[1]

vii^{o} or oV^{7} $\qquad$ vii^{o7} or oV^{9}

5. Altered tones

a. The usual alterations in triads are taken care of by the quality of the Roman numeral as explained above.

$\mathrm{ii} \quad \mathrm{II} \quad \mathrm{II}^{+} \quad \mathrm{ii}^{o}$

b. The Arabic numerals, which show the chord's inversion, do not show altered tones.

c. The Neapolitan sixth chord is symbolized:

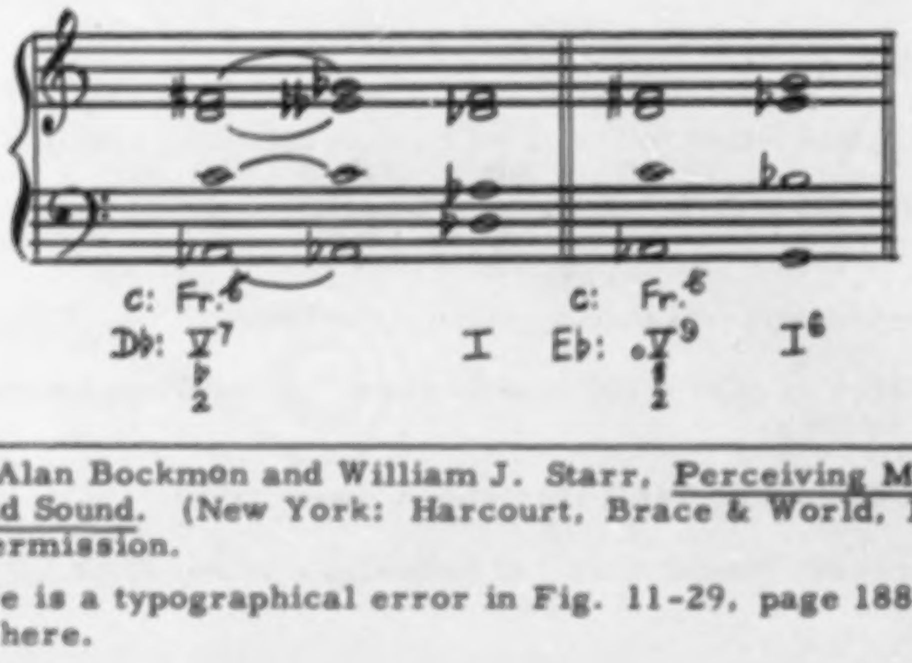
N^{6}

d. The traditional augmented sixth chords are symbolized:

$\mathrm{It.}^{6} \quad \mathrm{Fr.}^{6} \quad \mathrm{Ger.}^{6}$

e. The only other symbolization of altered chords is the following example, which, along with one other (page 189, Fig. 11-32), expresses the altered tones in terms of scale degree; the flat means lowered and the sharp means raised.[2]

(PM, page 188 - Fig. 11-29)[1]



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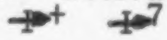
[1] Guy Alan Bockmon and William J. Starr, Perceiving Music: Problems in Sight and Sound. (New York: Harcourt, Brace & World, Inc., 1962). Used by permission.

[2] There is a typographical error in Fig. 11-29, page 188 which has been corrected here.

BOCKMON & STARR (PM)

f. When the tonic chord is altered or is dissonant, the following symbol is used to show that it is not being used as a point of rest; this is called an "activated tonic chord." (page 162)[1]



6. Modulation

Modulation is graphically illustrated by a series of diagrams which show key relationships around the circle of fifths. The authors also distinquish the following types of modulation:

a. "Dead-interval" key changes, i. e., ending a phrase in one key and beginning the next phrase in another key.
b. Modulation by common chord
c. Chromatic modulation
d. Enharmonic modulation

The music examples show the usual dual interpretation of a chord in two keys (as in common-chord modulation), or the analysis begins directly in the new key (as in a "dead-interval modulation").

C. Nonharmonic tones

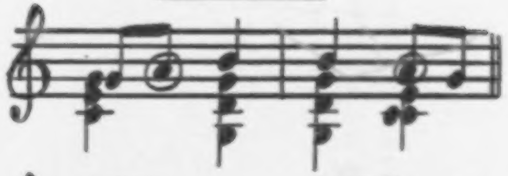
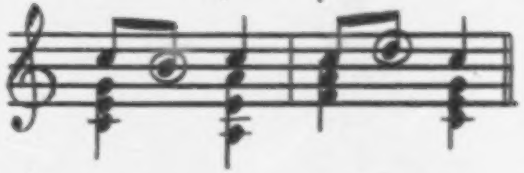
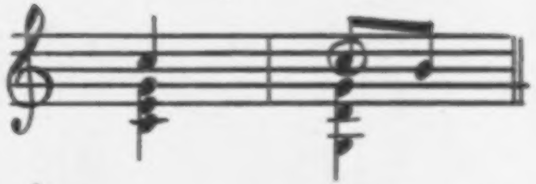
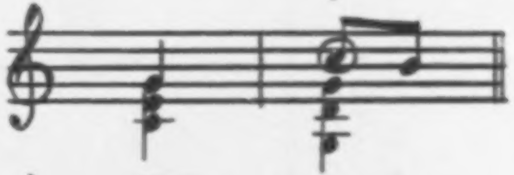
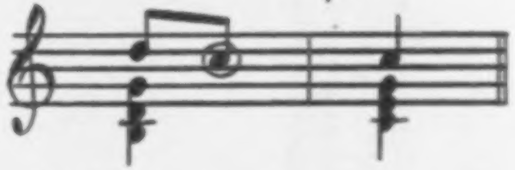
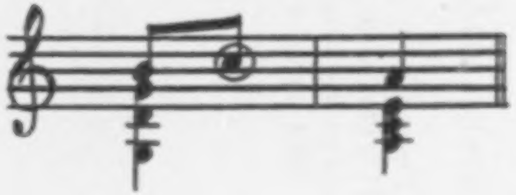
There are eight types of nonharmonic tones described in the text. All are illustrated with music examples except the pedal point and the free tone. They are defined primarily by the way in which they are approached and left, and only secondarily by accent.

---

[1] Guy Alan Bockmon and William J. Starr, Perceiving Music: Problems in Sight and Sound. (New York: Harcourt, Brace & World, Inc., 1962). Used by permission.

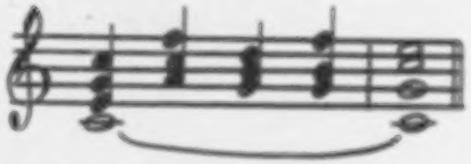
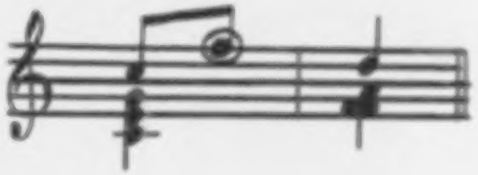
BOCKMON & STARR (PM)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing tone	None are used		By step	By step	Same as approach
Neighboring tone			By step	By step	Opposite to approach
Suspension			By same tone	By step	Down or up
Appoggiatura			By leap	By step	Opposite to approach
Anticipation			By step	Same tone	
Escape tone			By step	By leap	Opposite to approach

BOCKMON & STARR (PM)

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Pedal point	- - - - - None are used - - - - - - - - -		Held tone - member of first and last chords		
Free tone			By leap	By leap	

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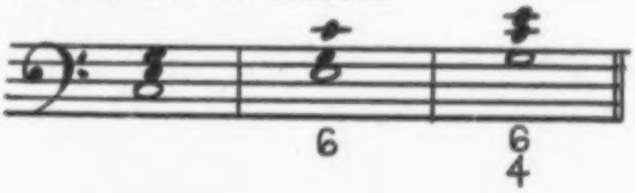
BUSSLER (EH)

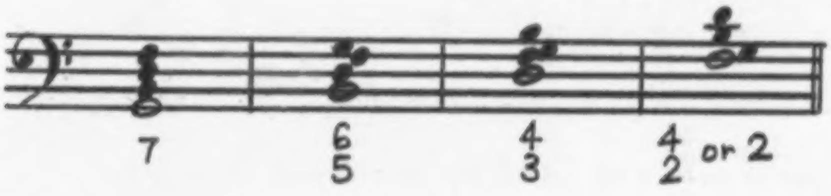
This is one of the older harmony books, an English translation of the second German edition having appeared in this country in 1891. It is remarkable in that it makes very sparing and sporadic use of Roman numeral chord symbols; however, it does discuss modulation, certain nonharmonic tones and there is a full explanation of "thorough-bass."

A. Figured bass

1. Triads and inversions

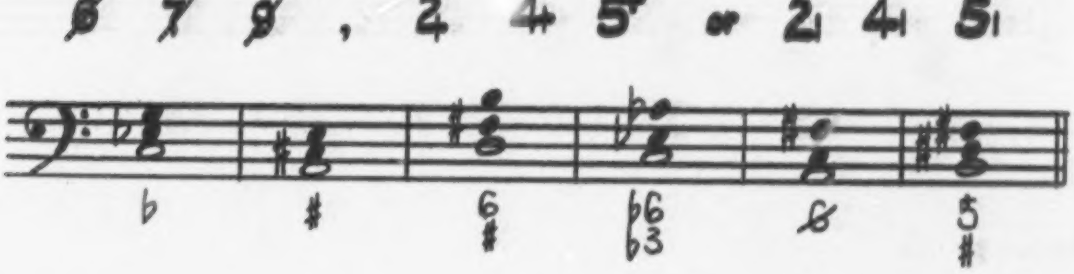


2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals precede the figures affected.
   c. Slanting and vertical strokes are employed as follows to indicate a tone raised a chromatic half-step.

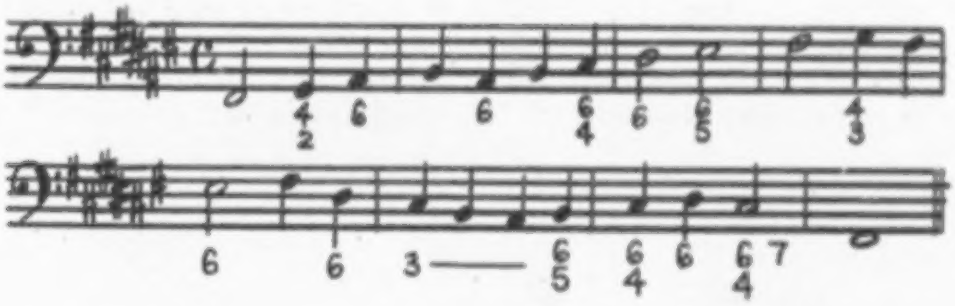


4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. A dash indicates that a tone is held or repeated.

BUSSLER (EH)

(EH, page 92 - Ex. 16 - 107)[1]


4
2
6
6
6
4
6
6
5
4
3
6
6
3
6
5
6
4
6
6
4
7

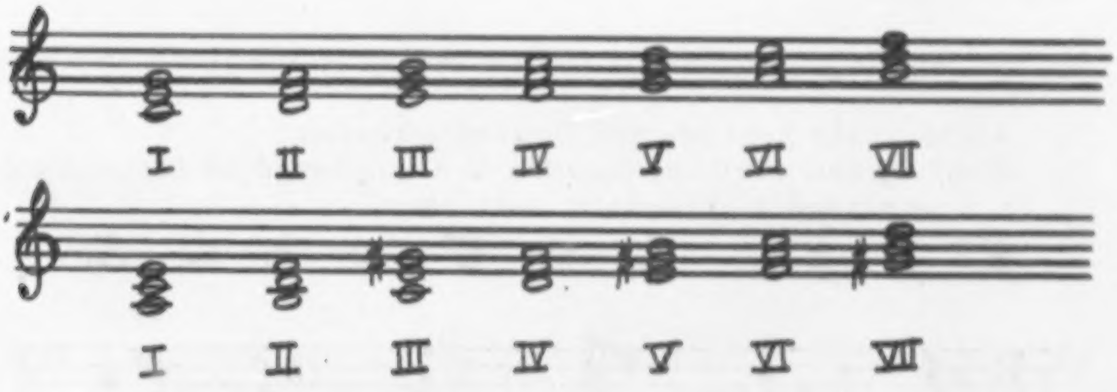
B. Chord symbols

1. Key indication

a. A major key is indicated:
C-major B♭-major F♯-major
b. A minor key is indicated:
c-minor b♭-minor f♯-minor

2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.


I
II
III
IV
V
VI
VII
I
II
III
IV
V
VI
VII

3. Inversions

Inversions are shown solely by the Arabic numerals of figured bass. These are not combined with the Roman numeral.

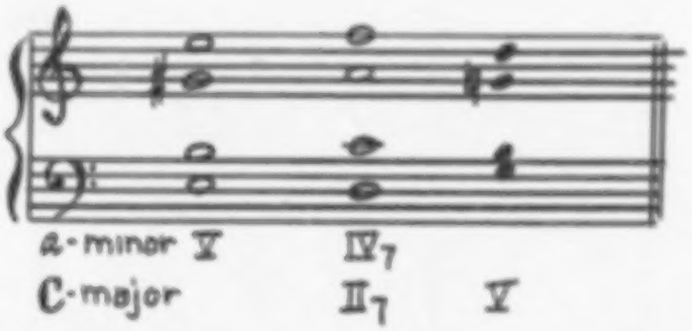
---

[1] Ludwig Bussler, Elementary Harmony (New York: G. Schirmer, Inc., 1919). Used by permission.

4. Seventh (ninth, etc.) chords

While seventh and ninth chords are explained and illustrated, these are not symbolized, as a general rule. The single example of such symbolization is the following.

(EH, page 169, Ex. 288, last measure)[1]



There are no examples of the symbolization of seventh chords in inversion.

5. Altered tones

No examples of the symbolization of altered chords were found. The "subordinate triad on the flatted second" (i. e., the Neapolitan sixth chord), the "augmented chord of the sixth," and "other mixed chords" are discussed. These are illustrated in staff notation but they are not symbolized.

6. Modulation

While the concept of modulation is explained and illustrated, there is no particular symbolization employed, except for the example quoted in B. 4 above.

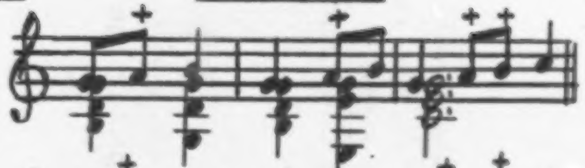
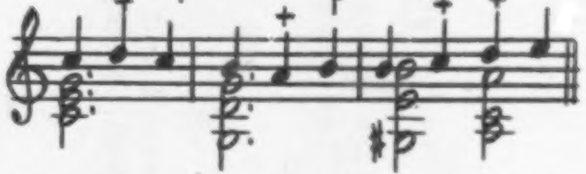
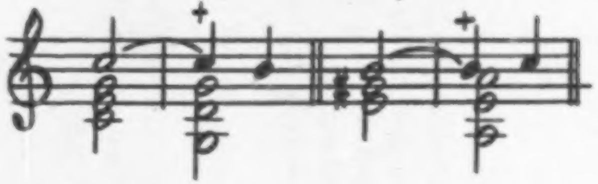
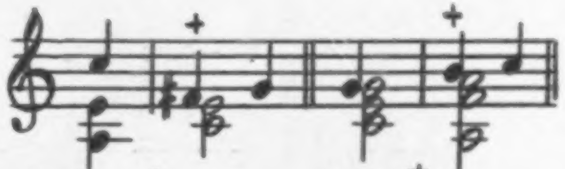
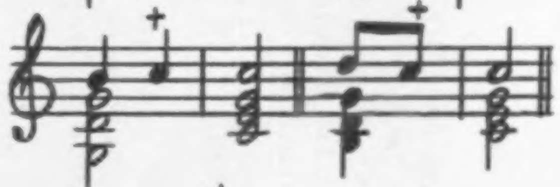
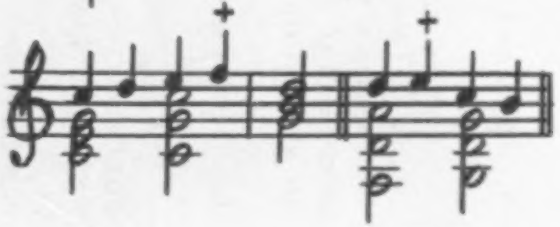
C. Nonharmonic tones

These are called "tones foreign to the harmony;" Bussler says, "they are grouped in four chief classes: 1. Passing-notes, 2. Suspension, 3. Anticipation, 4. Changing-notes." (page 94)[1] As will be clear from the following chart, these definitions are quite different from those in common use today.

---

[1] Ludwig Bussler, Elementary Harmony (New York: G. Schirmer, Inc., 1919). Used by permission.

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing-notes	None are used		By step	By step	Same as approach
					or Opposite to approach
Suspensions			Same tone	By step	Down or Up
(unprepared suspension)			By skip	By step	
Anticipation			By step	By repeated tone	Same tone
Changing-notes			By step	By skip	Opposite to approach

CASS (RM)

Special Area Book

This book deals with the rudiments of music, as its name states. The material covered includes notation, clefs, scales, intervals, rhythm and meter, sight-singing exercises, dictation exercises and chord construction.

Modulation and nonharmonic tones are not mentioned. The only symbols which it uses, and with which we are concerned, are Roman numerals to indicate chords; the large Roman numeral is used for all chord types. There is no mention of figured bass, chord inversions, or altered chords.

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CASTELLINI (RM)

Special Area Book

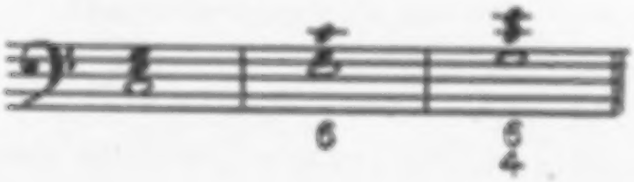
This book covers the rudiments of music with special emphasis upon the use of the piano. It is concerned not only with familiarizing the student with basic musical concepts but also with implementing their use at the keyboard. The scope of what is covered, however, is limited.

Figured bass and the Roman numeral chord symbols are used, but there is no mention made of modulation or altered chords, and only one type of nonharmonic tone is used.

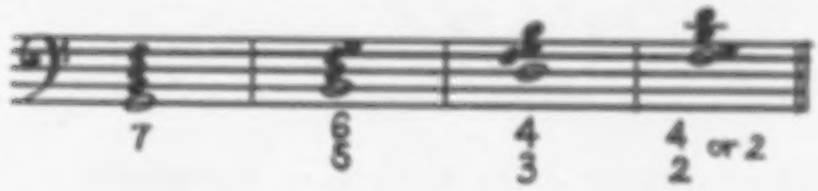
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions

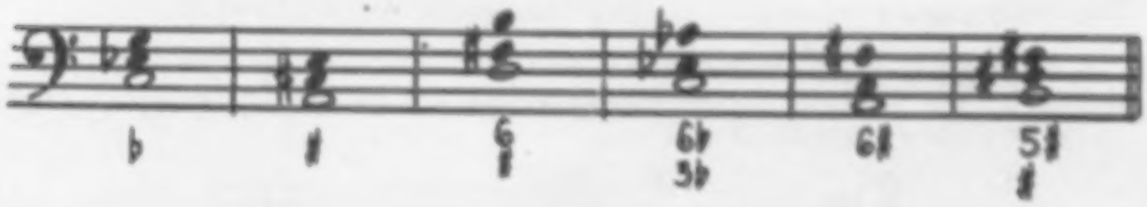


2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals follow the figures affected.
   c. The slanting stroke (6̸) is not used.



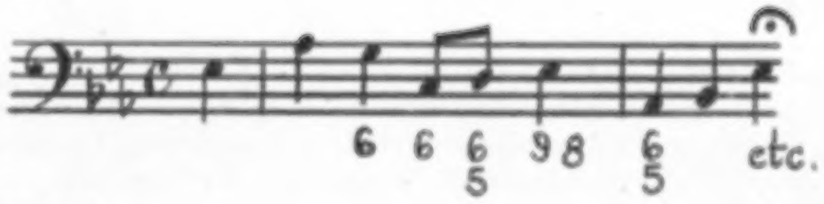
4. Nonharmonic tones

There is only one example of figured bass which indicates nonharmonic tones.

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. The dash is not used.

CASTELLINI (RM)

(RM, page 163)[1]



B. Chord symbols

1. Key indication

a. A capital letter, sometimes followed by "Major," indicates a major key. C Major

b. A small letter, sometimes followed by "minor," indicates a minor key. c minor

2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.
I II III, etc.

3. Inversions

The Arabic figures are placed to the lower right of the Roman numeral to show the chord inversion. II_6 $\mathrm{I}_{6 \atop 4}$

4. Seventh (ninth, etc.) chords
V_7 $\mathrm{V}_{6 \atop 5}$ $\mathrm{V}_{4 \atop 3}$ V_2

5. Altered tones

The only altered chords used are secondary dominants.
C I V_7 I V_7 of IV IV I V_7 of V V, etc.

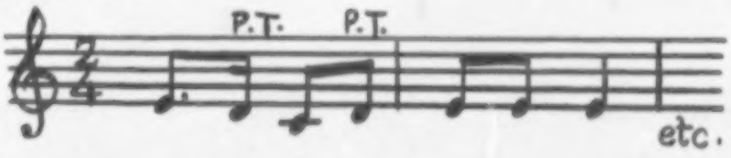
6. Modulation

No modulation is discussed or symbolized.

C. Nonharmonic tones

The only nonharmonic tone mentioned is the following:

A passing tone "consists of a nonharmonic tone passing on to a chord tone. It does not demand a change in the harmony." (page 166)[1] This is abbreviated: P. T.



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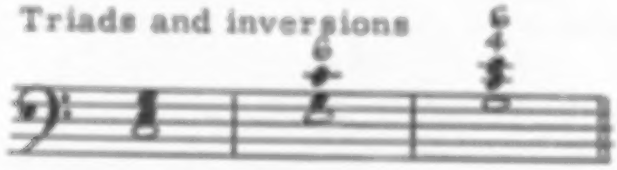
[1] John Castellini, Rudiments of Music (New York: W. W. Norton & Co., Inc., 1962). Used by permission.

CHADWICK (H)

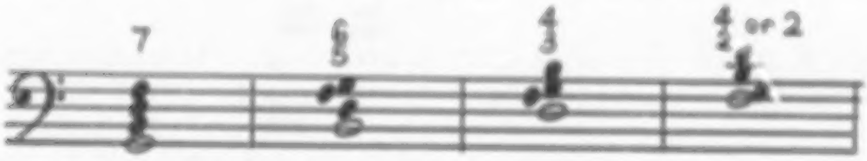
A. Figured bass

Arabic numerals are placed above the bass part, or, if treble and bass clefs are used, between the two staves.

1. Triads and inversions

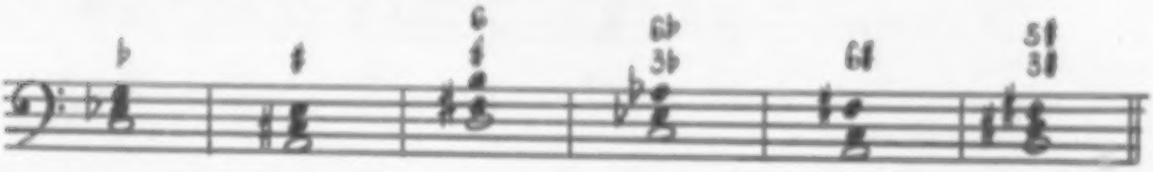


2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

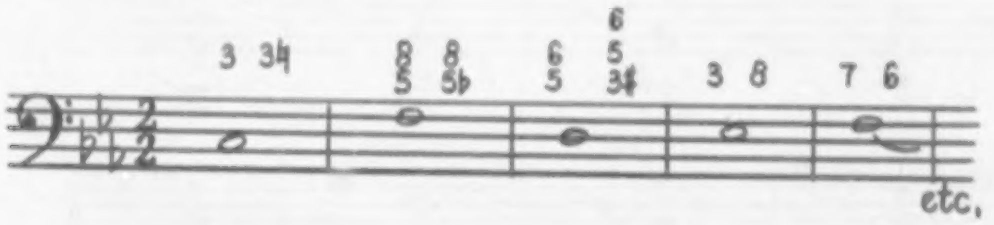
   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals follow the figures affected.
   c. The slanting stroke (6̸) is not used.



4. Nonharmonic tones

A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.

(H, page 132 - Ex. 1)[1]



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[1] George Whitefield Chadwick, Harmony. (New York: The B. F. Wood Music Co., Inc., 1904). Used by permission.

B. Chord symbols

1. Key indication

a. A capital letter followed by a colon indicates a major key.
C: B♭: F♯:

b. A small letter followed by a colon indicates a minor key.
c: b♭: f♯:

2. The Roman numeral chord symbol (triads)

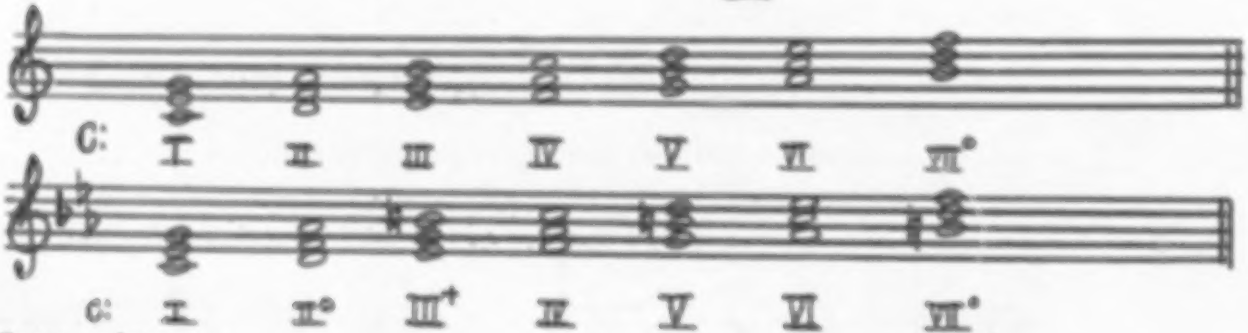
Roman numerals and Arabic figures (without accidentals) are combined to indicate chords and inversions. The quality of each triad type is shown by the Roman numeral symbol as follows:

a. A large Roman numeral indicates a major triad.
I V

b. A small capital Roman numeral indicates a minor triad.
II III

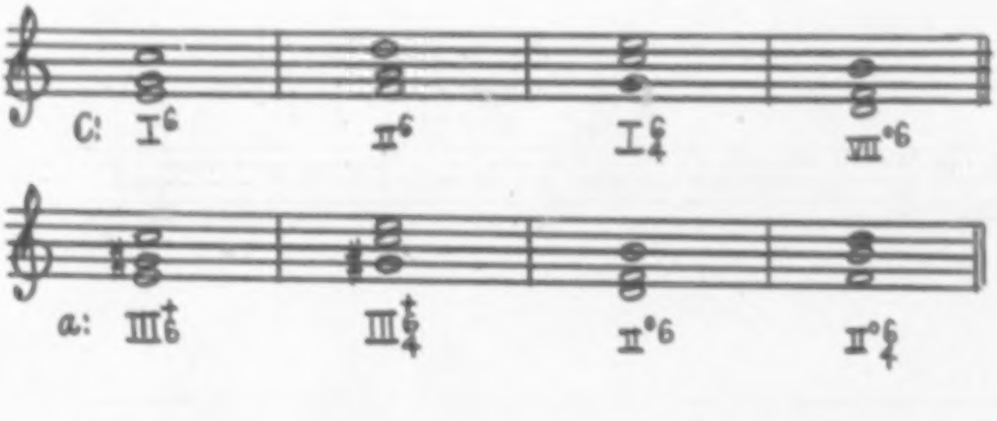
c. A large Roman numeral with a plus sign (+) at the upper right indicates an augmented triad. III+

d. A small capital Roman numeral with a circle (o) at the upper right indicates a diminished triad. VII°



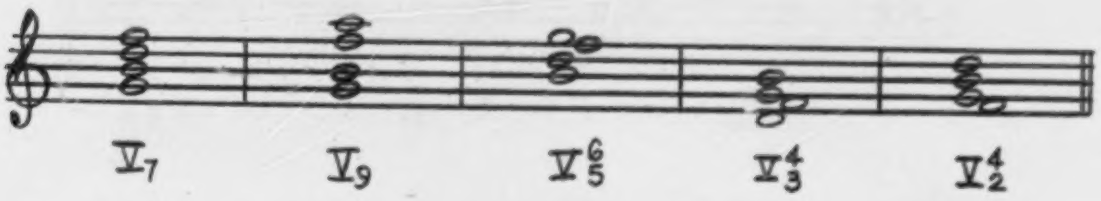
3. Inversions

The single figure (6) is placed to the upper right of the Roman numeral. (However, see below for the seventh.) When two or more figures occur these are placed to the right. In the diminished triad, the inversion figures are placed after the circle; in the augmented triad, the figures occur below the cross.

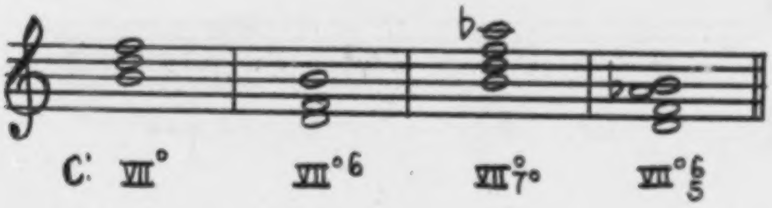


4. Seventh (ninth, etc.) chords

The seventh (or the ninth) is added to the lower right of the Roman numeral; all other figures occur to the right.



Triads and seventh chords on the leading-tone are called "incomplete dominants" but are symbolized as VII.

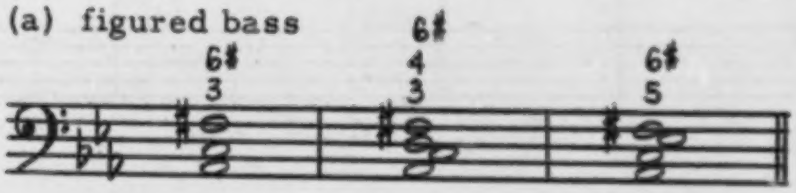

C: VII°
$\mathrm{VII}^{\circ 6}$
$\mathrm{VII}^\circ_{7^\circ}$
$\mathrm{VII}^{\circ 6}_{\ 5}$

Eleventh and thirteenth chords are not mentioned in the original edition, but are briefly discussed in an Appendix which was added to a later edition. In this Appendix these chords are presented as leading to "polyharmony," but no special symbolization is used for the musical examples.

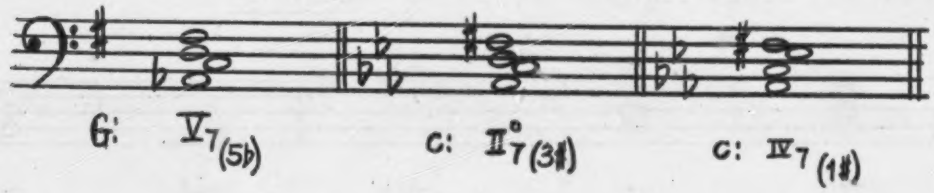
5. Altered tones

All of the simple chromatic alterations to triads and seventh chords can be shown by the system explained above, as long as the result is a major, minor, augmented or diminished triad, with or without a seventh. The only other sonorities which are dealt with here are the so-called "mixed chords." These are triads or seventh chords with diminished thirds or augmented sixths. Chadwick uses special symbols for the common augmented sixth chords and the Neapolitan sixth chord, as well as the usual figured bass numerals. The examples show augmented sixth chords constructed, not only on II and IV, but also on V, VII, VI and III. At least three kinds of symbols are used:

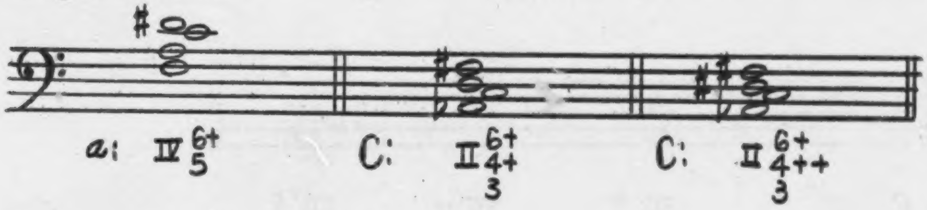
(a) figured bass



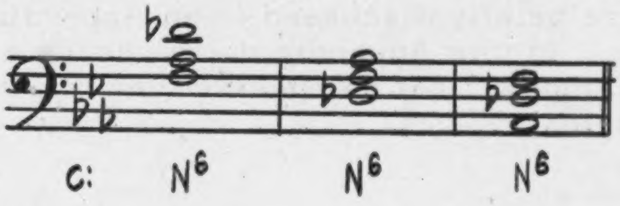
(b) chord symbol - the alteration being expressed in terms of the chord member (root, third or fifth) rather than as an interval above the lowest tone.



(c) chord symbol with figured bass and the plus sign. The plus sign is here used to mean "augmented," regardless of the actual accidental needed. Two plus signs mean "doubly augmented."

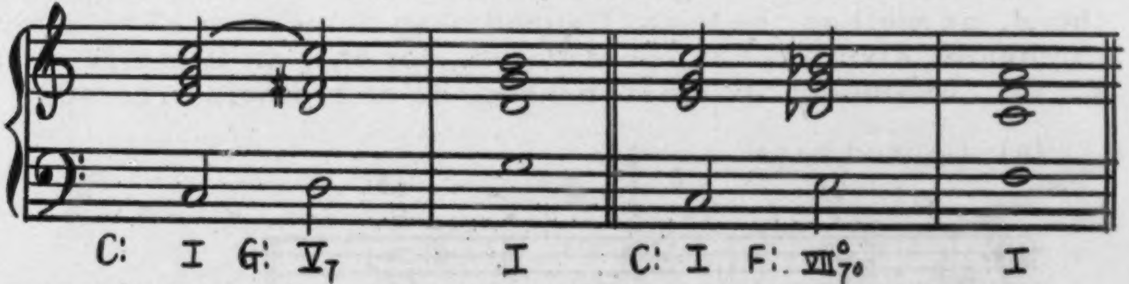


The Neapolitan sixth chord is symbolized N^6. This same symbolization is used, not only for the first inversion of this chord, but also for the root position and second inversion.



6. Modulation

Chadwick has several chapters which cover modulations to practically every possible key from a given starting point. Although he explains the general theory of a common-chord modulation by saying one enters the new key through a chord of the old key, the dual analysis of this pivot chord is not shown. The usual symbolization is as follows:

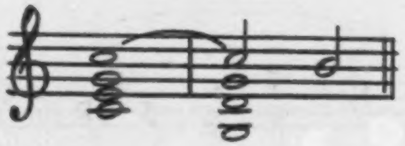
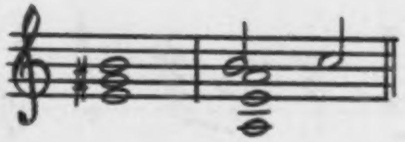
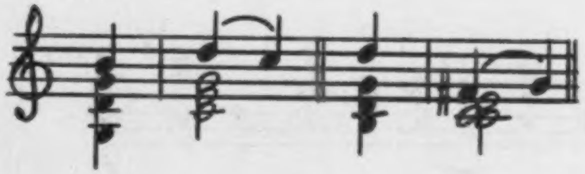
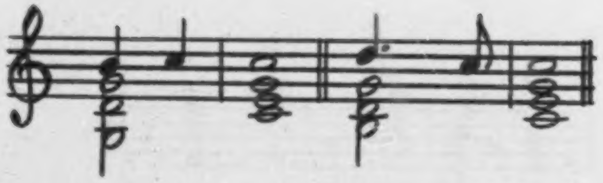
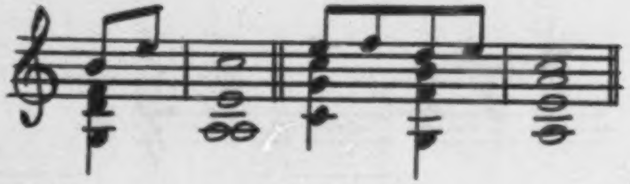


C. Nonharmonic tones

Nonharmonic tones are introduced relatively late in the Chadwick book (chapter 55), and after seventh chords, augmented sixth chords and modulation. The order in which these devices are presented is also somewhat unusual. The suspension is explained first followed by the appoggiatura, anticipation and finally by the passing tone and embellishment (neighboring tone). The order of presentation is followed in the following chart.

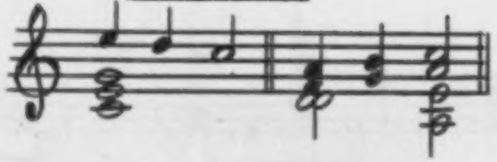
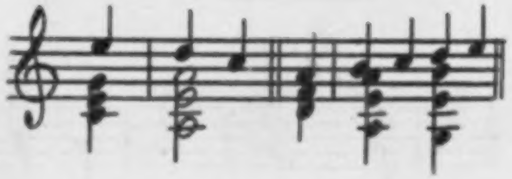
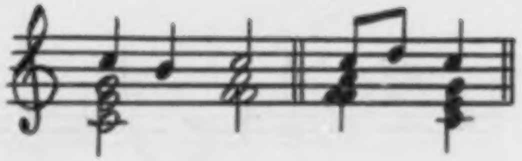
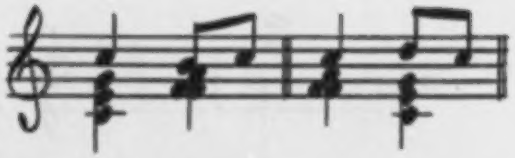
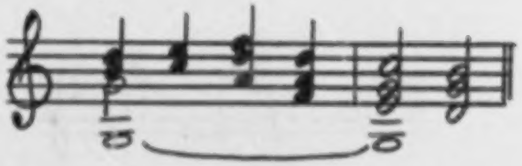
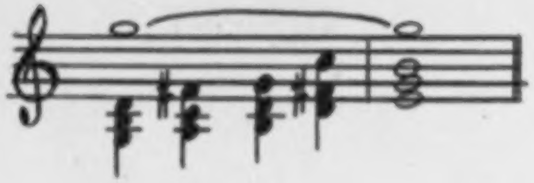
CHADWICK (H)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Suspension	None are used		Repeated or tied note	By step	Down
Retardation			Repeated or tied note	By step	Up
Appoggiatura			By skip	By step	Opposite to approach
Anticipation			By step	Same note	Repeated note
Irregular Anticipation (Changing tones)			By step or skip	By skip	Anticipates note in another voice

CHADWICK (H)

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing tone (unaccented)			By step	By step	Same as approach
(accented)			By step	By step	Same as approach
Embellishment (unaccented)			By step	By step	Opposite to approach
(accented)			By step	By step	Opposite to approach
Pedal point			Held note in bass		
Inverted pedal			Held note in upper part.		

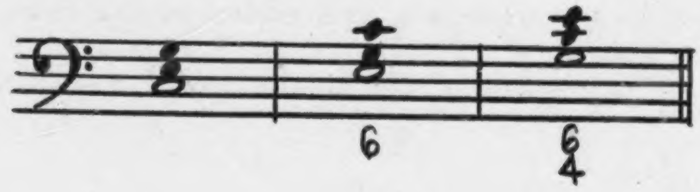
CUTTER (HA)

This is a book on harmonic analysis which assumes that the student already has completed a harmony course. It is a remarkable book, written almost at the beginning of this century (1902), which anticipates McHose's chord classification scheme, and deals in a most thorough way with the analytical details of the Romantic period. The author's logic and thoroughness, apparent throughout the book, lead inevitably to a complicated kind of symbolization in which every tone is accounted for.

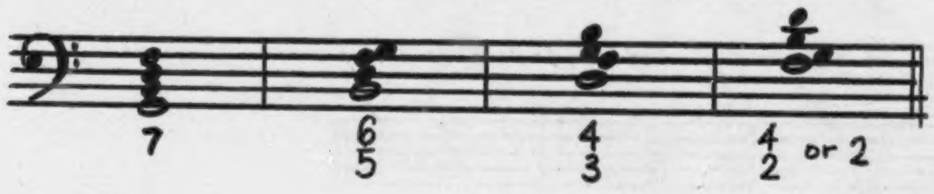
A. Figured bass

There are no figured bass exercises as such; the Arabic figures given below are combined with the Roman numeral which is placed under the bass part.

1. Triads and inversions



2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

None are symbolized independently of the chord symbol.

4. Nonharmonic tones

None are symbolized with figured bass signs only.

B. Chord symbols

1. Key indication

a. A capital letter indicates a major key.
C B♭ F♯

b. A small letter indicates a minor key.
c b♭ f♯

2. The Roman numeral chord symbol (triads)

The quality of each triad type is shown by the Roman numeral symbol as follows:

CUTTER (HA)

a. A large Roman numeral indicates a major triad. I V

b. A small (but not lower-case) Roman numeral indicates a minor triad. II III

c. A large Roman numeral with the plus sign (+) as a superscript indicates an augmented triad. III^{+}

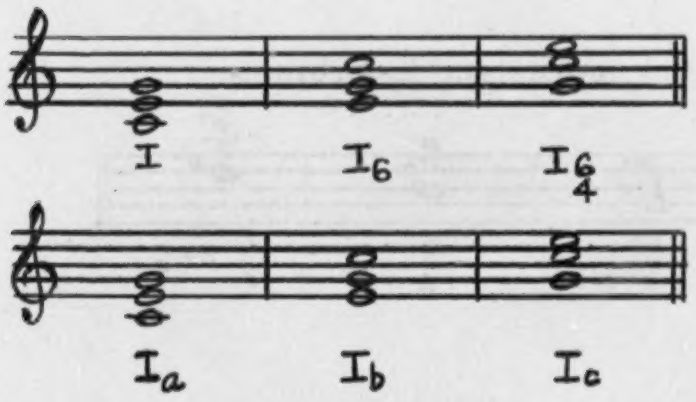
d. A small Roman numeral with the circle (°) as a superscript indicates a diminished triad. VII$^{\circ}$

3. Inversions

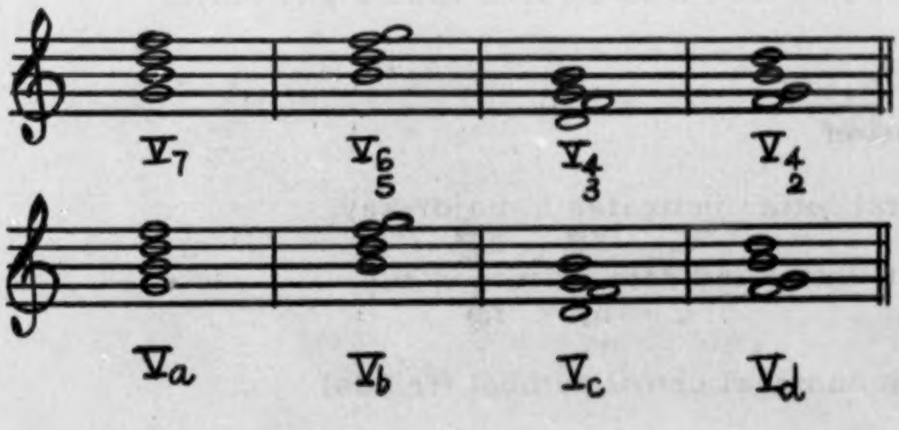
Two systems are given:

a. The Arabic figured bass numerals are added to the lower right of the Roman numeral.

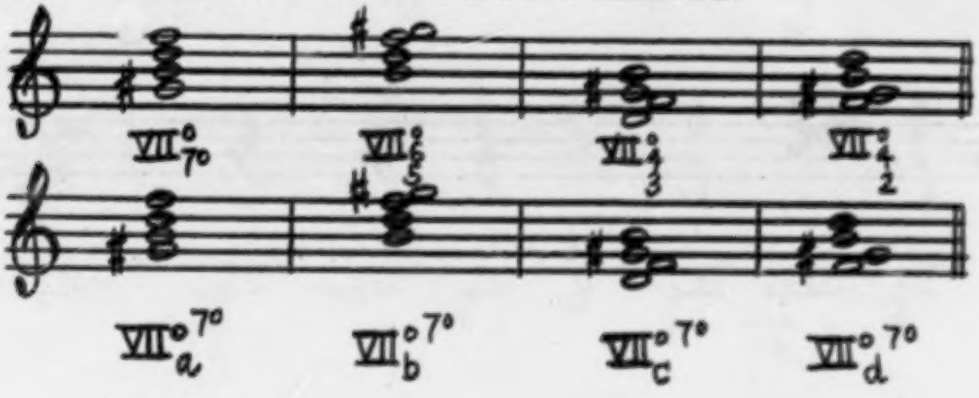
b. Small letters (a, b, c, d) are added to the lower right of the Roman numeral.



4. Seventh (ninth, etc.) chords

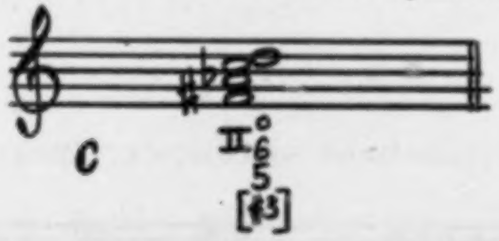


The diminished seventh chord is marked:



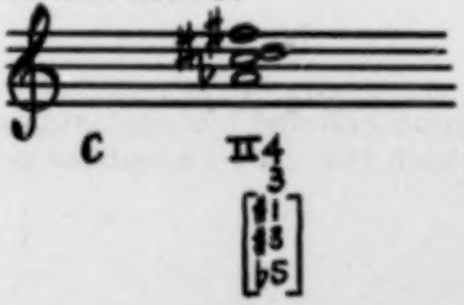
5. Altered tones

Altered tones, other than the common triad types explained above, are indicated by figures showing the altered chord member, placed in brackets below the chord symbol; the accidentals precede these figures. A supertonic seventh, in first inversion, with diminished fifth and raised third would be symbolized:



Note that the Arabic figures from figured bass show only the chord inversion and are not altered by accidentals; the altered chord members appear in brackets below this, beginning with the root at the top. The actual accidentals in each particular key are used.

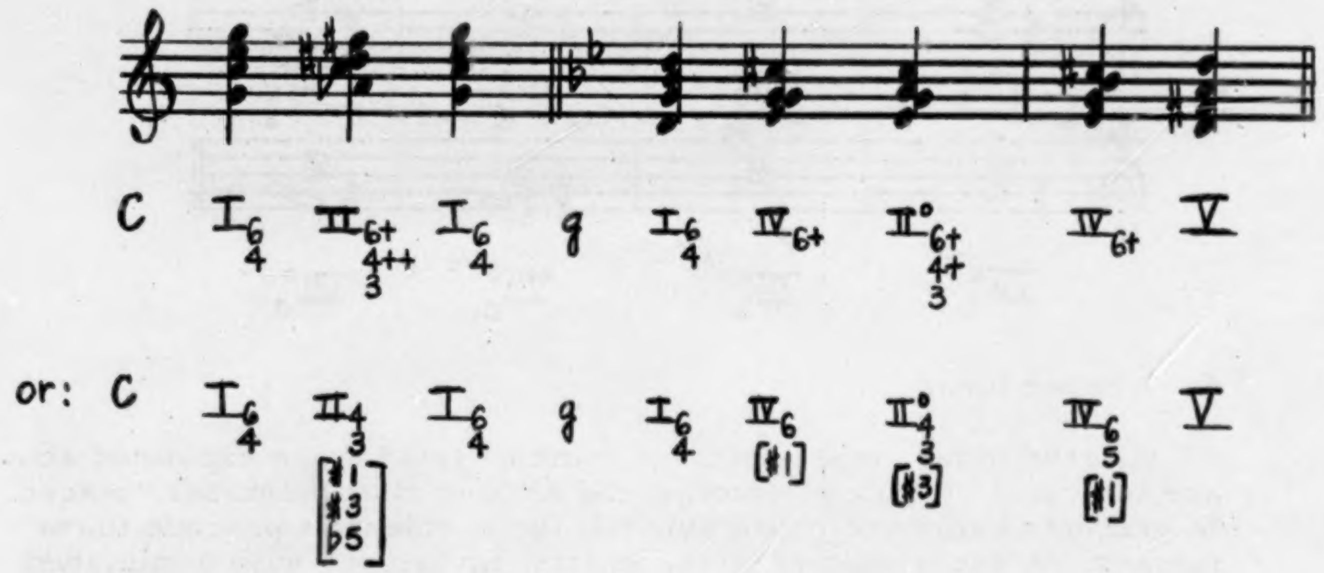
This sometimes makes an unwieldy, elongated symbol when several tones are altered. The size of the Roman numeral, in the case of altered chords, is determined by the type of the chord without alterations. An augmented sixth chord in a major key would thus be symbolized as follows:



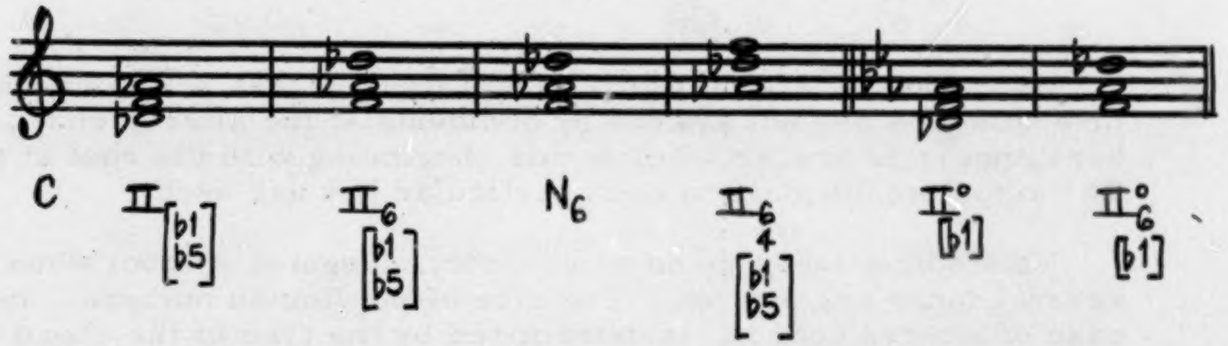
Cutter gives alternative symbols for the augmented sixth chords based upon the plus sign (+) meaning augmented. For example, the following are two symbolizations, either of which may be used.

CUTTER (HA)

(HA, page 57 - 1st example)[1]


C
I 6 4
II 6+ 4++ 3
I 6 4
g
I 6 4
IV 6+
II° 6+ 4+ 3
IV 6+
V
or: C
I 6 4
II 4 3 [#1 #3 b5]
I 6 4
g
I 6 4
IV 6 [#1]
II° 4 3 [#3]
IV 6 5 [#1]
V

The Neapolitan sixth is symbolized as follows: (page 61)[1]


C
II [b1 b5]
II 6 [b1 b5]
N6
II 6 4 [b1 b5]
II° [b1]
II° 6 [b1]

6. Modulations

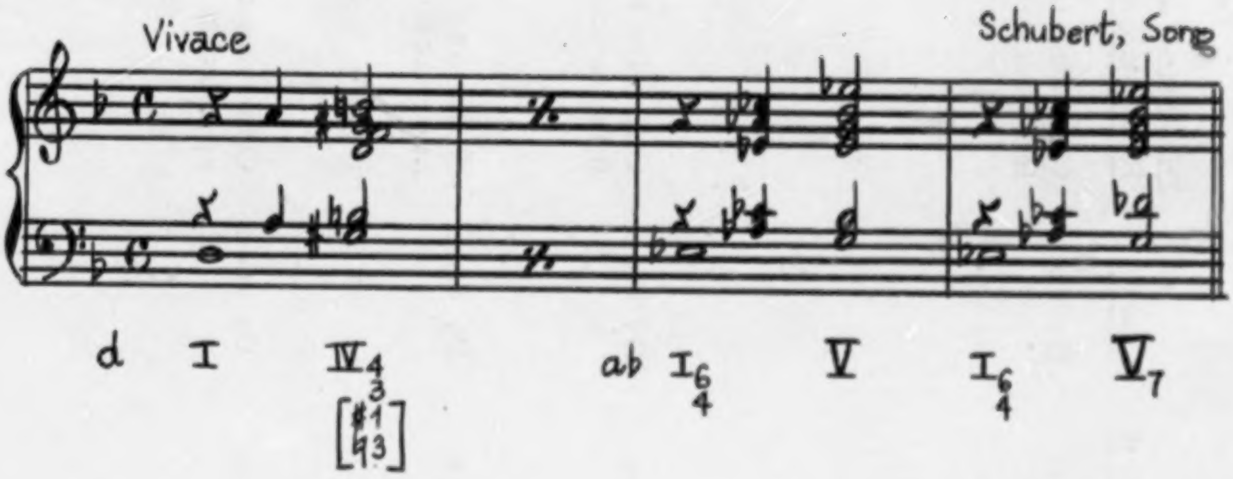
No mention is made of common chords. Modulations are symbolized by writing in the new tonic to which the chord symbols are then related.

---

[1] Benjamin Cutter, Harmonic Analysis (Boston: Oliver Ditson Co., 1902). Used by permission.

CUTTER (HA)

(HA, page 45 - Ex. 76)[1]



C. Nonharmonic tones

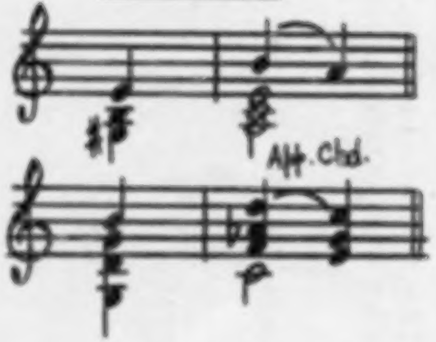
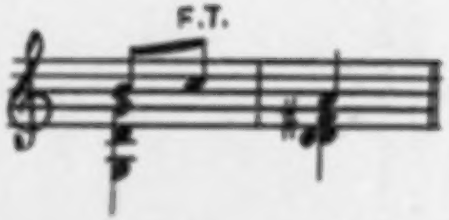
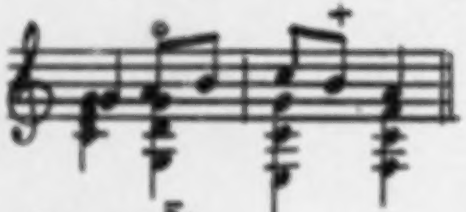
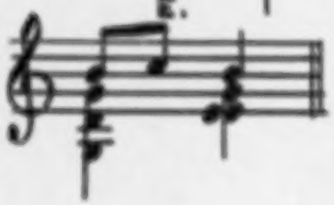
These are treated in considerable detail. The basic definitions are made primarily on the way the "non-harmonic" tone is approached and left, and only secondarily as to accent. There are eleven types enumerated and some of these have variations as indicated in the following chart.

---

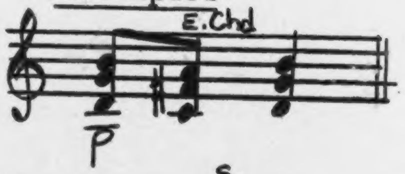
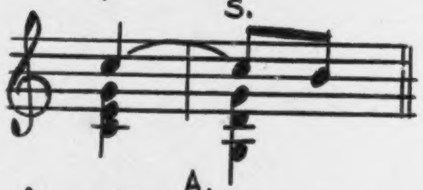
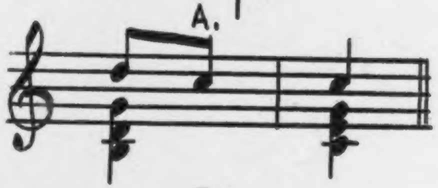
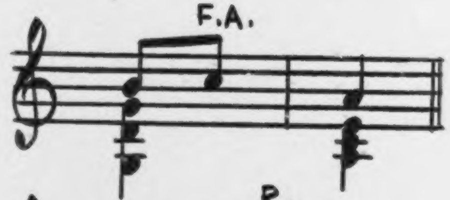
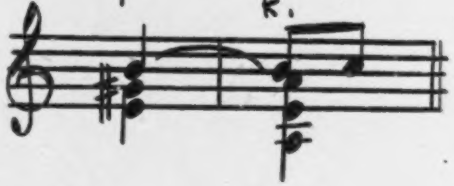
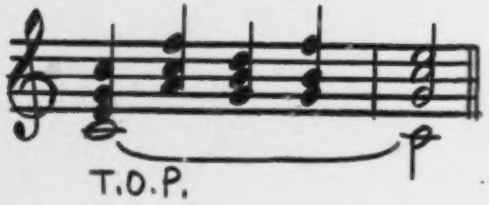
[1] Benjamin Cutter, Harmonic Analysis (Boston: Oliver Ditson Co., 1902). Used by permission.

CUTTER (HA)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Appoggiatura Double Triple Chord	App. D. App. T. App. App. Chd.		By leap	By step	Opposite to Resolution
Free Tone	F. T.		By step	By leap	Opposite to Resolution
Accented Passing Tone Unaccented Passing Tone	o +		By step	By step	Same as approach
Embellishment	E.		By step	By step	Opposite to approach

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Embellishing Chord	E. Chd.		By step	By step	Opposite to approach
Suspension	S.		By tied note	By step	Down
Anticipation	A.		By step	By repeated note	Same tone
Free Anticipation	F. A.		By step	By leap	Opposite to Resolution
Retardation	R.		By tied note	By step	Up
Organ Point Tonic Dominant Mediant Double	 T. O. P. D. O. P. M. O. P. Dbl. O. P.				

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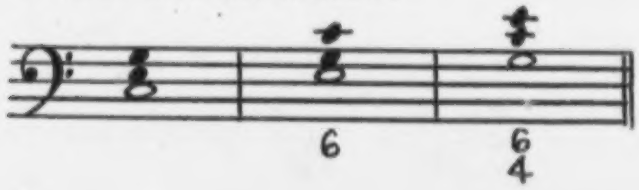
DALLIN (FMT)

Special Area Book

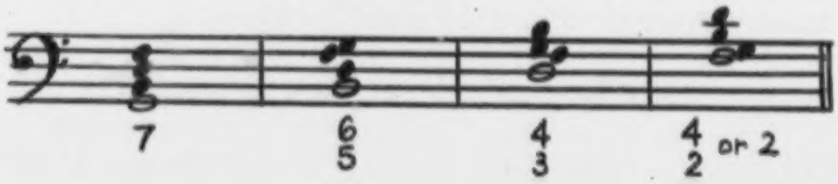
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions



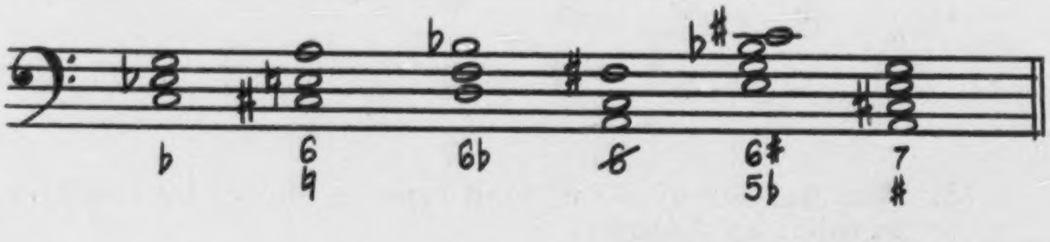
2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals follow the figures affected.
   c. The slanting stroke (6̸) indicates a tone is raised a chromatic half-step.

(FMT, page 112 - Ex. 115)[1]



4. Nonharmonic tones

"Tones that are not chord members are indicated, as are chord tones, by Arabic numerals showing the interval above the bass." (page 112)[1] There are no examples given.

---

[1] Leon Dallin. Foundations in Music Theory. Belmont, California: Wadsworth Publishing Co., Inc., 1962. Used by permission.

DALLIN (FMT) SAB

B. Chord symbols

This book does not go into some of the problems, such as voice-leading and chord choice, which are usually treated in harmony books, but restricts itself to fundamentals. It does, however, show several systems of symbolization, including jazz chord symbols and those for the autoharp used in school music which are generally not mentioned in conventional theory books.

1. Key indication

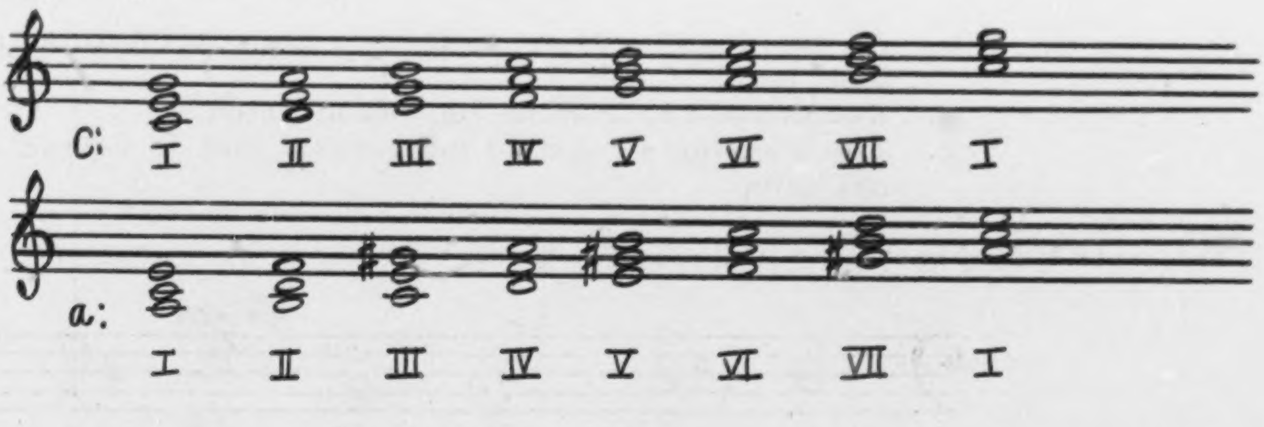
   a. A capital letter followed by a colon indicates a major key.
   C: B♭: F♯:
   b. A small letter followed by a colon indicates a minor key.
   c: b♭: f♯:

2. The Roman numeral chord symbol (triads)

   Two systems using Roman numerals are shown:

   (1) Large Roman numerals are used to indicate all types of triads in both major and minor keys.

(FMT, page 108 - Ex. 106)[1]



   (2) The quality of each triad type is shown by the Roman numeral symbol as follows:

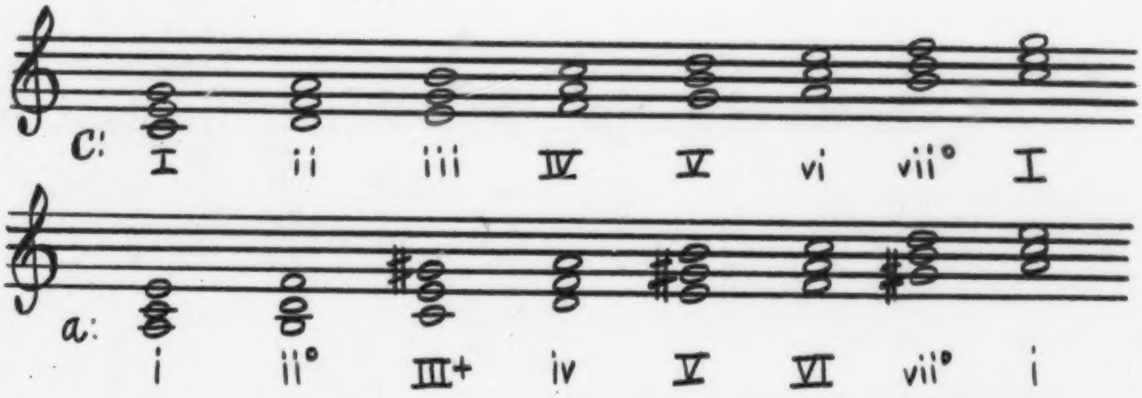
   a. A large Roman numeral indicates a major triad.
   I V
   b. A small (lower-case) Roman numeral indicates a minor triad.
   ii iii
   c. A large Roman numeral followed by a plus sign (+) indicates an augmented triad.
   III+
   d. A small Roman numeral with a circle at the upper right indicates a diminished triad.
   vii°

---

[1] Leon Dallin. Foundations in Music Theory. Belmont, California: Wadsworth Publishing Co., Inc., 1962. Used by permission.

DALLIN (FMT) SAB

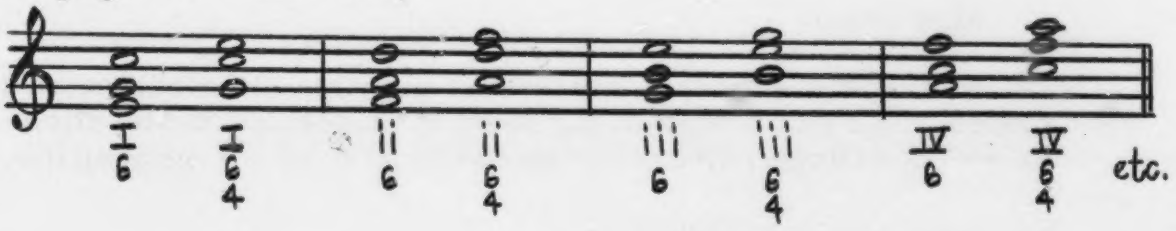
(FMT, page 108 - Ex. 107)[1]


C:
I
ii
iii
IV
V
vi
vii°
I
a:
i
ii°
III+
iv
V
VI
vii°
i

3. Inversions

The Arabic numerals are placed below the Roman numeral to show chord inversion. Only the system B 2(2) is illustrated.

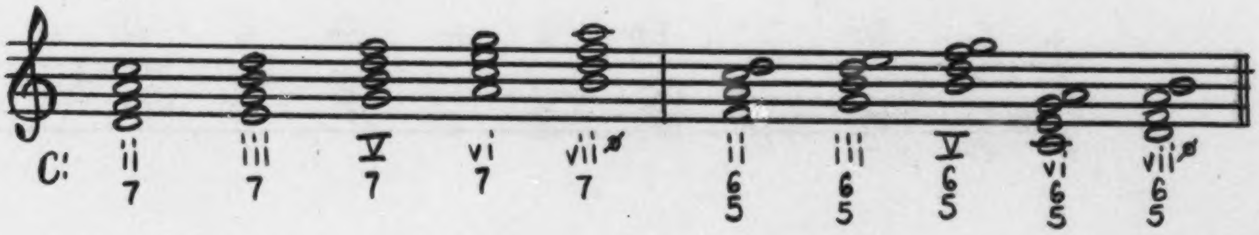
(FMT, page 113 - Ex. 116)[1]


I 6
I 6 4
ii 6
ii 6 4
iii 6
iii 6 4
IV 6
IV 6 4
etc.

4. Seventh (ninth, etc.) chords

Diatonic seventh chords are indicated as explained in B 2(2) above, with the addition of the Arabic numerals to show the seventh or the inversion. A half-diminished seventh chord is shown by the addition of ∅. Only the following types of seventh chords are illustrated:

(FMT, page 113 - Ex. 116)[1]

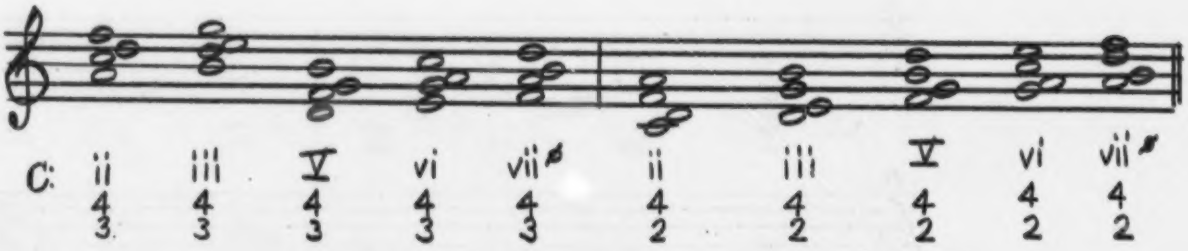

C:
ii 7
iii 7
V 7
vi 7
vii∅ 7
ii 6 5
iii 6 5
V 6 5
vi 6 5
vii∅ 6 5

---

[1] Leon Dallin. Foundations in Music Theory. Belmont, California: Wadsworth Publishing Co., Inc., 1962. Used by permission.

DALLIN (FMT) SAB

(FMT, page 113 - Ex. 116)[1]



5. Altered tones

No Roman numeral symbolization of altered tones is given, other than those alterations of the minor scale shown in B 2(2) above. There is an illustration showing how altered tones are indicated in figured bass (see A 3 above) and there are some altered chords given under jazz symbols (see B 7 below).

6. Modulation

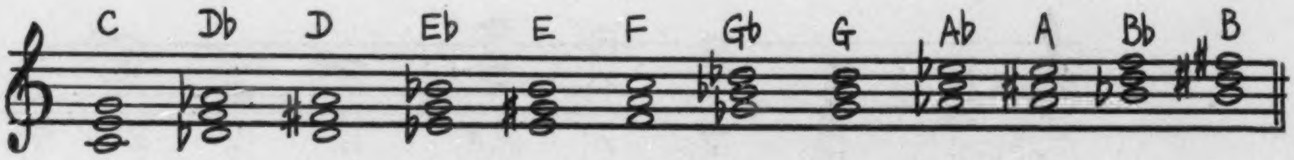
In keeping with the limitations mentioned, modulation is not explained or symbolized in the text; it is defined in the Glossary-Index as -- "A change of key during the course of a composition." (page 140)[1]

7. Jazz chord symbols

The chord symbols used in jazz are placed over the melody in published sheet music. The discussion in this book gives the following symbols and explanations:

a. Triads - a letter, or a letter followed by an accidental indicates a major triad built on that tone.

(FMT, page 114 - Ex. 117)[1]



Other triad types are indicated by the following additions to this letter name:

minor triad	- m, mi or min
augmented triad	- aug or +
diminished (triad)	- dim

Diminished chords are interpreted as diminished seventh chords.

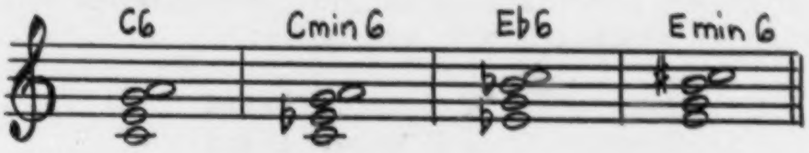
---

[1] Leon Dallin. Foundations in Music Theory. Belmont, California: Wadsworth Publishing Co., Inc., 1962. Used by permission.

DALLIN (FMT) SAB

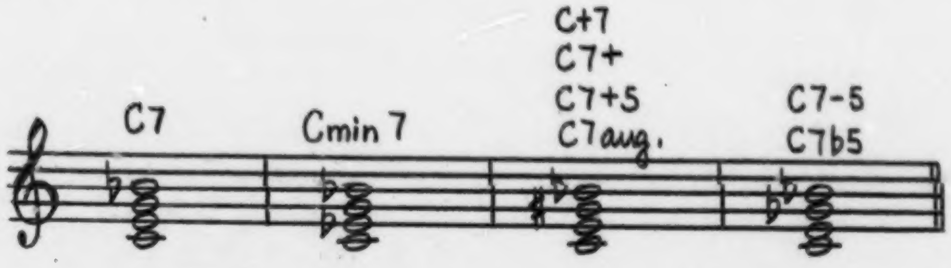
b. Added sixth - major sixths are added to major or minor triads by the addition of a 6 to the letter name.

(FMT, page 115 - Ex. 119)[1]


C6
Cmin 6
Eb6
Emin 6

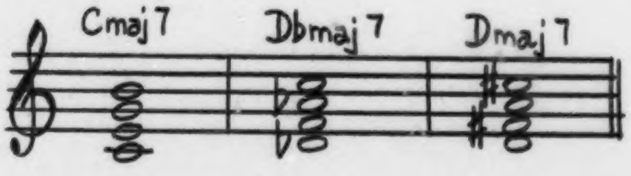
c. Seventh chords - a figure 7 added to a triad "ordinarily implies the addition of the minor seventh above the root."

(FMT, page 115 - Ex. 120)[1]


C7
Cmin 7
C+7
C7+
C7+5
C7aug.
C7-5
C7b5

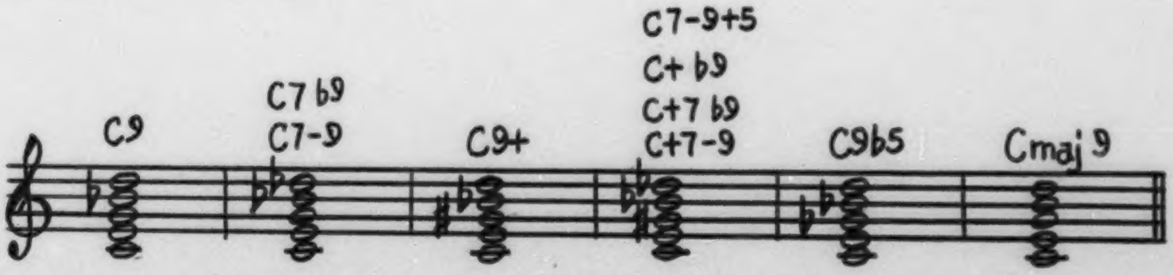
"Major sevenths are usual only with major triads. The symbol for this chord has the abbreviation maj between the letter name and the seven."

(FMT, page 115 - Ex. 122)[1]


Cmaj 7
Dbmaj 7
Dmaj 7

d. Ninth chords - "The basic structure consists of a dominant seventh chord plus a major ninth. Some other possibilities are indicated."

(FMT, page 116 - Ex. 123)[1]


C9
C7 b9
C7-9
C9+
C7-9+5
C+ b9
C+7 b9
C+7-9
C9b5
Cmaj 9

---

[1] Leon Dallin. Foundations in Music Theory. Belmont, California: Wadsworth Publishing Co., Inc., 1962. Used by permission.

DALLIN (FMT) SAB

This type of symbolization does not attempt to show chord inversions.

8. Some collections of community and recreational songs and some school music publications include symbols for the autoharp. Only three types of chords are available:

C = a C major triad
C min = a C minor triad
C^7 = a dominant seventh chord built on C

C. Nonharmonic tones

Since this book does not treat harmonic progression, nonchord tones are not discussed.

DALLIN (TTCC)

Special Area Book

Some books emphasize a particular aspect of music theory, and the format used to categorize the symbolization in conventional theory texts does not always apply. This book is concerned with twentieth century compositional techniques; examples are usually given in staff notation and very little use is made of analytic symbols. The author states in the Preface: "The introduction of any new system of analysis has been consciously avoided. Contemporary materials are related to conventional practices and are explained, as far as possible, in conventional terminology. In the case of harmonic structures, elaborate verbal descriptions are avoided by notating the structures of the sonorities in their most obvious arrangement in conjunction with the spacing used by composer." (page vi)[1]

A. Figured bass

No examples are used.

B. Chord symbols

1. Key indication

This is written out in words: D-flat major

2. The Roman numeral chord symbol (triads)

There is only one example in the text; on page 97 the author shows an analysis using Roman numerals to indicate triads and seventh chords in an excerpt from the Khachaturian Violin Concerto.

Large Roman numerals are used for all chords regardless of type.

3. Inversions

Inversions are not indicated.

4. Seventh (ninth, etc.) chords

The Arabic numeral 7 is added as a superscript to the upper right of the Roman numeral when a seventh chord is symbolized.

$\mathrm{VI} \quad \mathrm{I}^7$

5. Altered tones

Altered tones are not indicated.

6. Modulation

Modulation is not symbolized, but is described in words.

C. Nonharmonic Tones

No specific definitions are given for nonharmonic tones.

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[1] Leon Dallin, Techniques of Twentieth Century Composition (Dubuque, Iowa: Wm. C. Brown Company, 1957). Used by permission.

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ELLIOTT (FM)

This is an elementary theory book that emphasizes the fundamentals but does very little with the study of harmony.

A. Figured bass

There are no examples of figured bass which are separate from the chord symbol. The usual Arabic figures derived from figured bass are combined with the chord symbol as shown below.

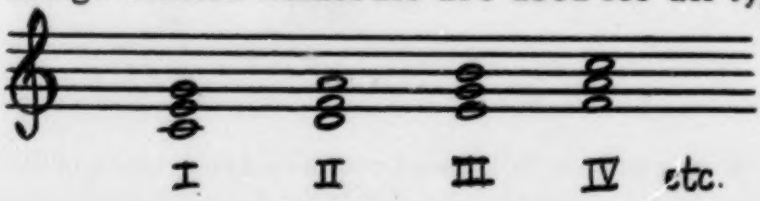
B. Chord symbols

1. Key indication

   a. A capital letter, sometimes followed by the word "Major," indicates a major key. G (Major)
   b. A small letter, sometimes followed by the word "Minor," indicates a minor key. g (Minor)

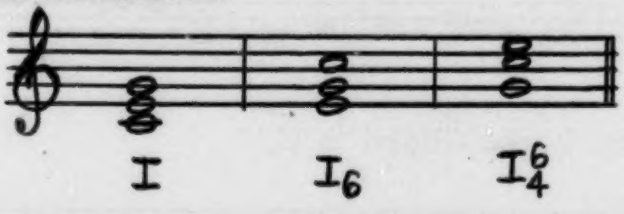
2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.



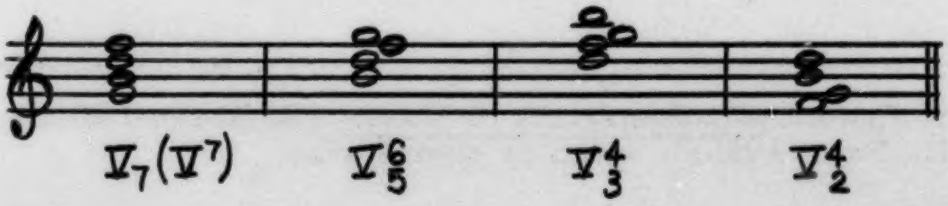
3. Inversions

The inversions of a triad are shown by combining the usual Arabic figures from figured bass with the Roman numeral chord symbol; these are placed to the lower right and to the right of the Roman numeral.



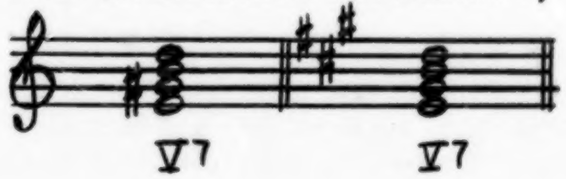
4. Seventh (ninth, etc.) chords

No chords larger than the seventh chord are shown.



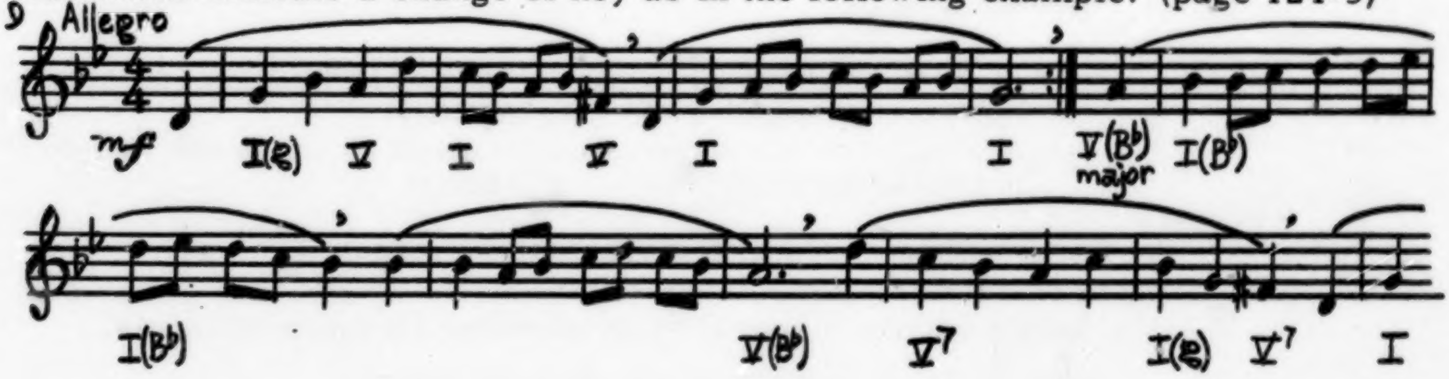
5. Altered tones

The only altered tone which is treated is the raised seventh of the minor scale. This alteration is not shown by the chord symbol.



6. Modulation

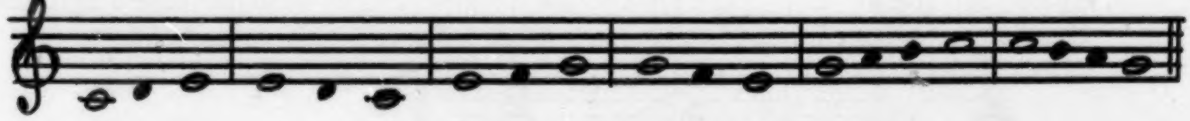
Modulation is not specifically defined; however, some of the exercises indicate a change of key as in the following example. (page 124-5)[1]



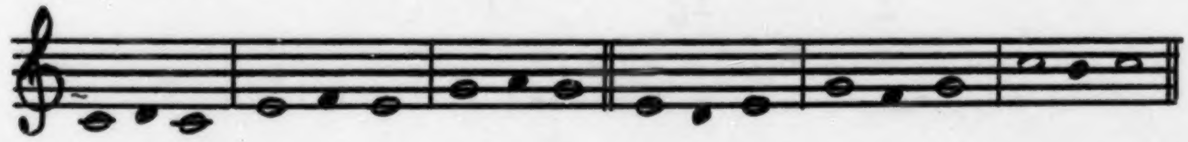
C. Nonharmonic tones

Only two types of nonharmonic tones are discussed in this book, the passing tone and the neighboring tone. These are defined in relation to the notes in the tonic chord; the passing tones are the intervening tones between chord notes, and the neighboring tones are those adjacent tones which return to a chord note. (FM, page 26 - Ex. 3-10)[1]

a. Passing tones of the Tonic Chord in C



b. Neighboring tones of the Tonic Chord in C



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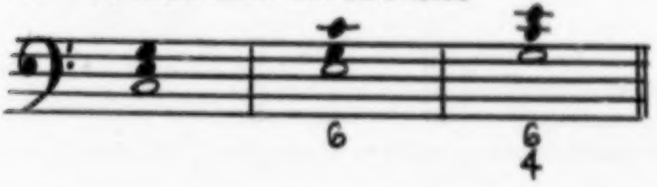
[1] Raymond Elliott, *Fundamentals of Music* (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1955.) Used by permission.

FOOTE & SPALDING (MH)

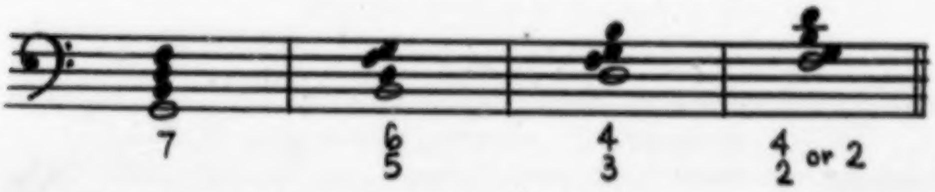
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions



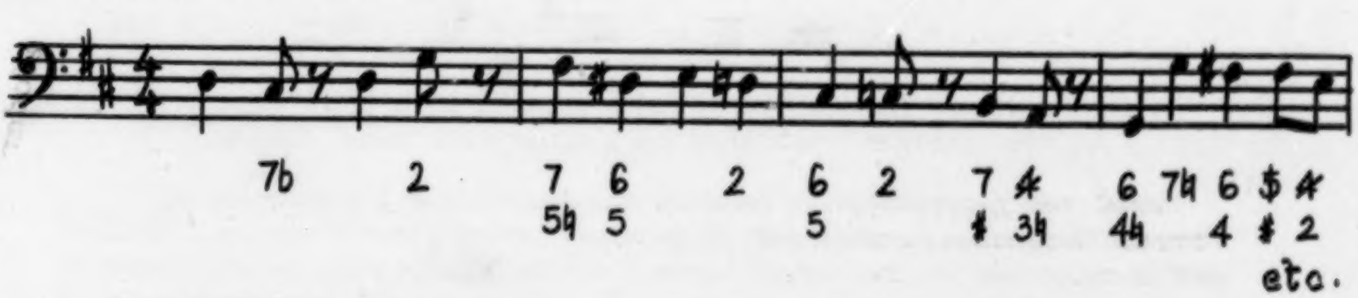
2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals follow the figure affected.
   c. The slanting stroke (6̸) and the vertical stroke (4̸) are used to indicate that a tone is raised a chromatic half-step.

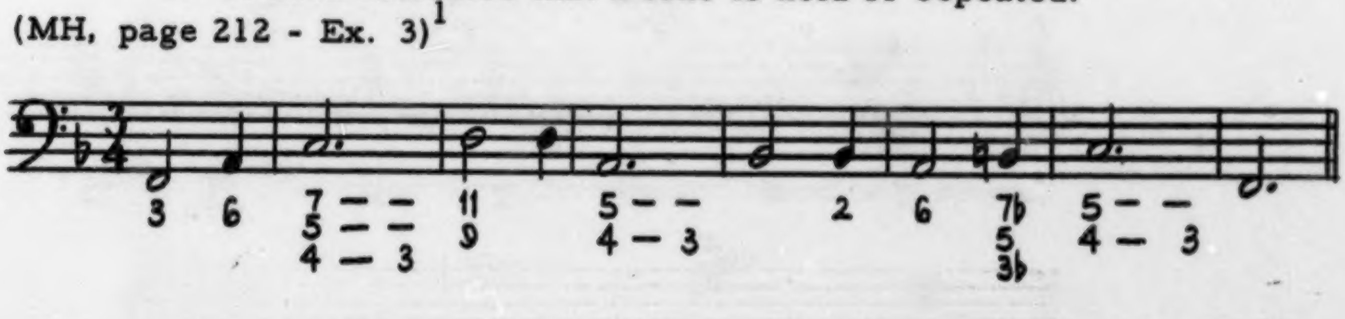
(MH, page 148 - Ex. 7)[1]



4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. A dash indicates that a tone is held or repeated.

(MH, page 212 - Ex. 3)[1]



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[1] Arthur Foote & Walter R. Spalding. Modern Harmony. Evanston, Illinois: Summy-Birchard Publishing Co., 1959. Used by permission.

FOOTE & SPALDING (MH)

B. Chord symbols

This is one of the few theory books which does not customarily combine the figured bass with the Roman numeral chord symbol in analysis. Some exercises show the Arabic numerals for figured bass, and some exercises, usually those in the early part of the book, show only the chord symbols. This means that the chord symbol does not show the chord inversion. The chord symbol shows only these things:

(a) The root of the chord
(b) The type of sonority
(c) Whether a triad or seventh chord

1. Key indication

Although the authors state, "similarly major keys will be indicated by large letters (G), and minor keys by small ones (e)," (page 36)[1] there is very little use made of this in the book's examples and exercises.

2. The Roman numeral chord symbol (triads)

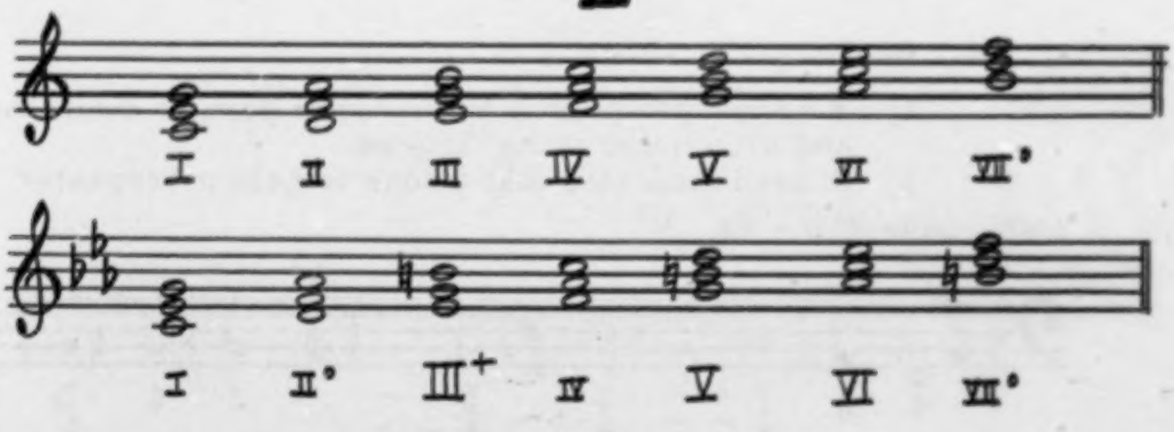
The quality of each triad type is shown by the Roman numeral symbol as follows:

a. A large Roman numeral indicates a major triad. I V

b. A small capital Roman numeral indicates a minor triad. II

c. A large Roman numeral followed by a plus sign (+) at the upper right indicates an augmented triad. III+

d. A small capital Roman numeral with a circle at the upper right indicates a diminished triad. VII°



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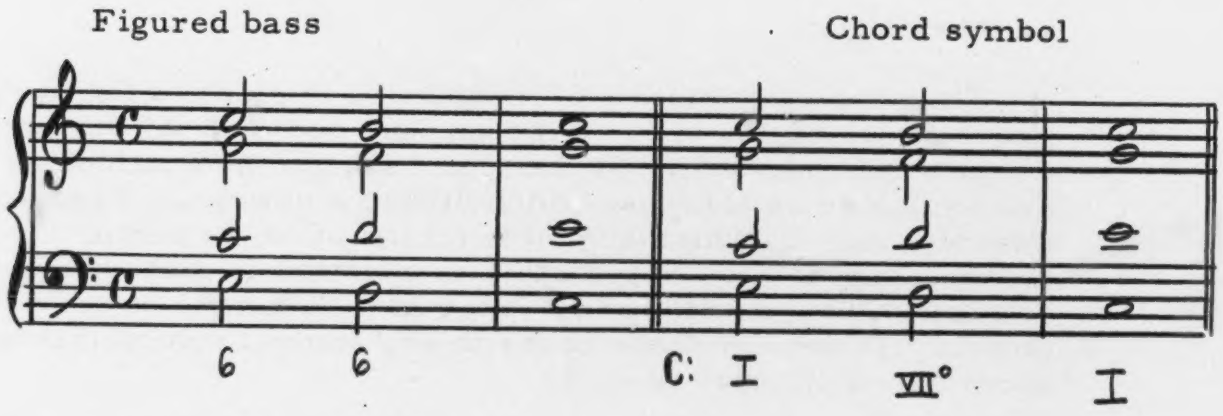
[1] Arthur Foote & Walter R. Spalding. Modern Harmony. Evanston, Illinois: Summy-Birchard Publishing Co., 1959. Used by permission.

FOOTE & SPALDING (MH)

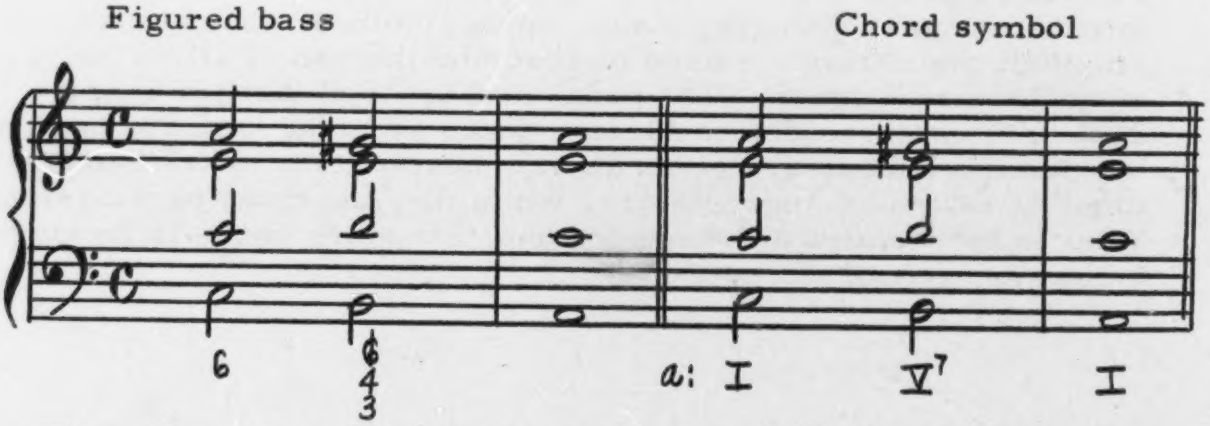
3. Inversions

As stated above, the authors do not attempt to indicate the inversion of the chord by the Roman numeral symbol.



4. Seventh (ninth, etc.) chords

The chord symbol indicates the seventh chord, but the inversion is not shown.



The authors take note of the theory that VII^7 can be considered a "V^9 with root omitted," but they reject this on the grounds that this is an acoustical rather than a musical phenomenon.

5. Altered tones

Except for the usual symbolization of the different types of triads as described above, this text does not attempt to show a chord symbol for chromatically altered chords. There is a chapter called "Chromatically Altered Chords" (Chapter XXXVII) where these chords are discussed, but no chord symbols for them are given. The Neapolitan sixth chord is discussed in this chapter but is indicated only in terms of figured bass, not chord symbol.

In Chapter XXXIX, "Augmented Chords," the usual augmented sixth chords are treated, but the only symbolization for them is again in terms of figured bass rather than a special chord symbol. In paragraph 194, page 185, the authors say: "Observe the augmented

4th in $\begin{smallmatrix}6\flat\\4+\end{smallmatrix}$; the figuring for these augmented chords in 6+, $\begin{smallmatrix}6+\\5\end{smallmatrix}$, $\begin{smallmatrix}6+\\4+\\3+\end{smallmatrix}$ to distinguish them from the inversions of triads and 7th chords, in which the 6th is not augmented."[1]

6. Modulation

The general definition of modulation is given to the student early (on page 43) in this book, although it is not used in the exercises until Chapter XX (page 85). At that point simple modulations to related keys are explained as (1) those which utilize a new note characteristic of the new key, and (2) which are "often fixed by an authentic cadence . . ."[1] Later (Chapter XLV, page 227), modulation is discussed in greater detail and this is followed by (page 234) "Changes of key without modulation." In none of these cases is any special symbolization used to show the modulatory process.

C. Nonharmonic tones

The suspension is the first nonharmonic tone introduced (Chapter XLI, page 199); the other devices are discussed later (Chapter XLIII, page 217) as "ornamental tones." These are presented in this order: Passing-tones, auxiliary tones, changing tones, appoggiaturas, anticipation. The term "melodic figuration" is used to describe the use of all of the various kinds of nonharmonic tones. The pedal is discussed last (in Chapter XLIX, page 243). The authors define passing-tones as being both accented and unaccented, but auxiliary tones are given as only unaccented. The "accented auxiliary tone" is called an appoggiatura, while the "accented passing-tone" is not. What is here called a "changing tone," in other books is frequently called an escape tone or échappée.

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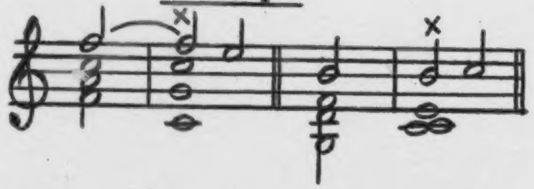
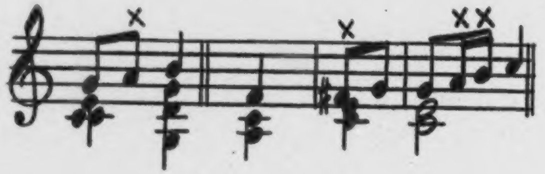
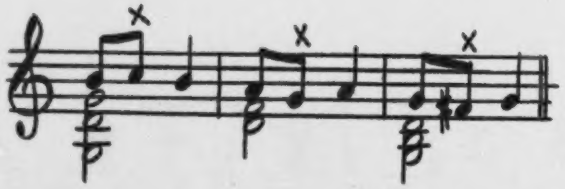
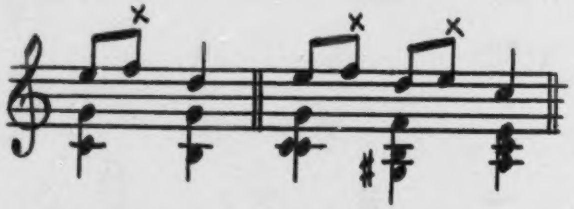
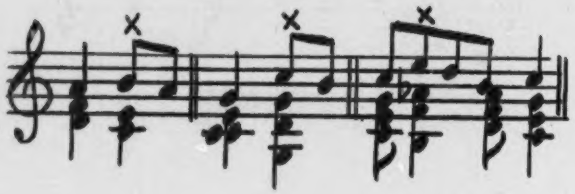
[1] Arthur Foote & Walter R. Spalding. Modern Harmony. Evanston, Illinois: Summy-Birchard Publishing Co., 1959. Used by permission.

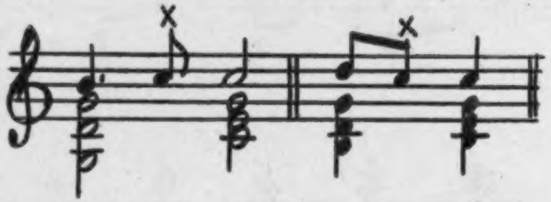
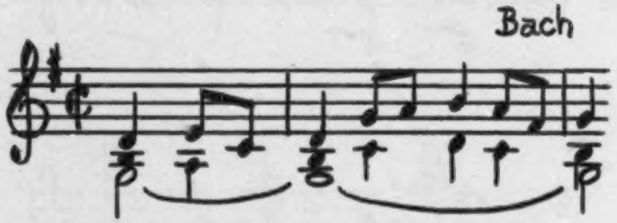
FOOTE & SPALDING (MH)

C. Nonharmonic tones

Name	Abbreviation	Example	Approached	Left	Direction of Resolution
Suspension (Retardation)	No abbreviations are used - all devices are indicated by an x.		By tied or repeated note	By step	Down or up
Passing-tone (Diatonic or chromatic) (Accented or Unaccented)			By step	By step	Same as approach
Auxiliary tone (Unaccented only)			By step	By step	Opposite to approach
Changing tone (Unaccented only)			By step	By skip	Opposite to approach
Appoggiatura (Usually accented) (Occasionally unaccented)			By step or skip	By step	Opposite to approach

FOOTE & SPALDING (MH)

C. Nonharmonic tones (cont.)

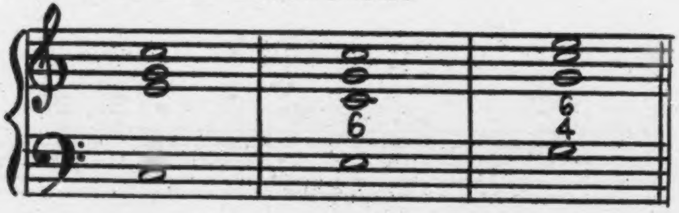
Name	Abbreviation	Example	Approached	Left	Direction of Resolution
Anticipation (Unaccented)	No abbreviations are used - all devices are indicated by an x.		By step	Repeated note	Same note
Pedal (Also inverted)			Held tone		

FORTE (TH)

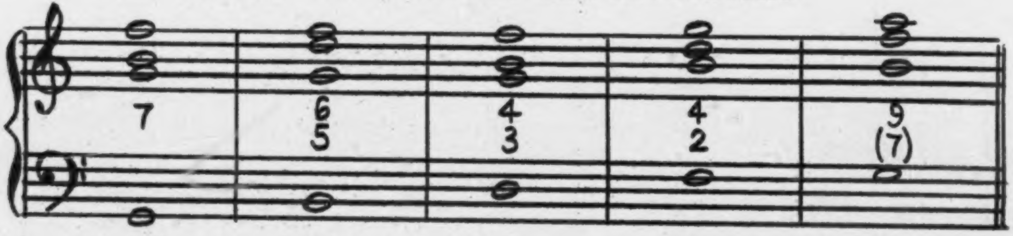
A. Figured bass

Arabic numerals are placed above the bass part or between the treble and bass staves.

1. Triads and inversions



2. Seventh (ninth, etc.) chords and inversions

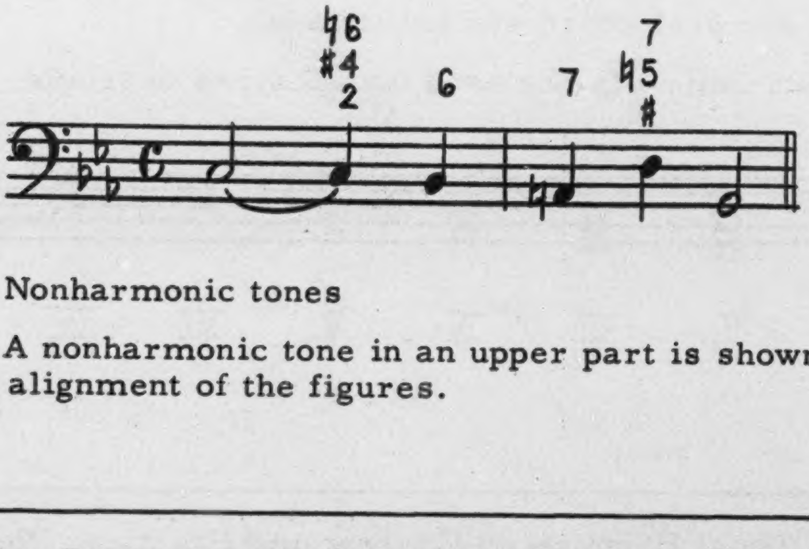


The so-called eleventh and thirteenth chords, and some forms of the ninth chord, are explained as "suspension" or "linear" chords which are melodically dependent upon triads or seventh chords.

3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals precede the figure affected.
   c. The slanting stroke (6̸) is not used.

(TH, page 301 - Ex. 213)[1]



4. Nonharmonic tones

A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.

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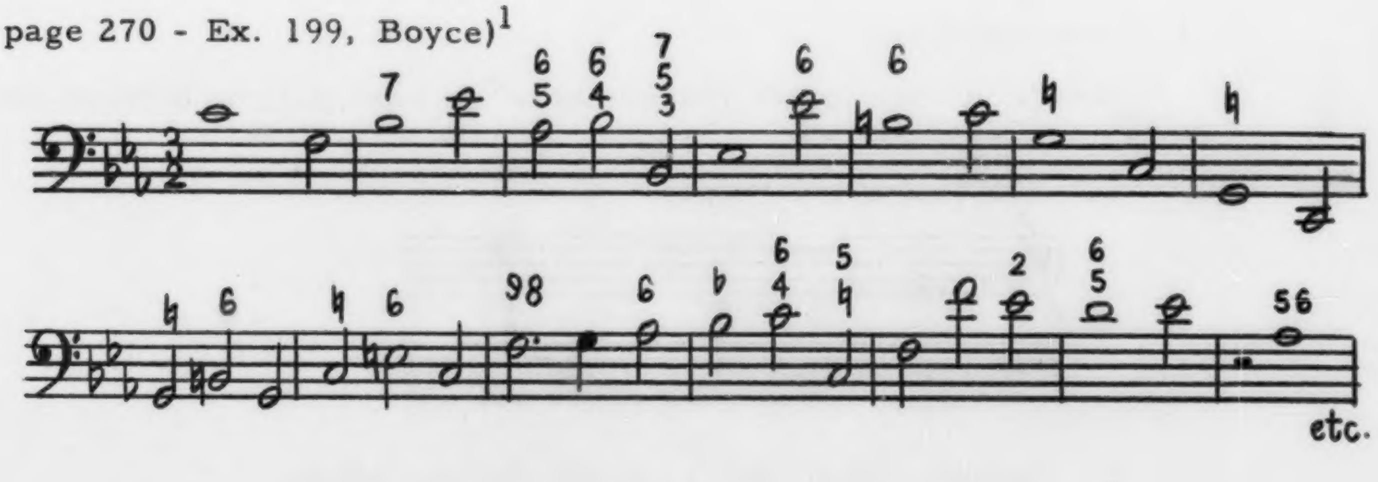
[1] Allen Forte, Tonal Harmony in Concept and Practice (New York: Holt, Rinehart and Winston, 1962). Used by permission.

FORTE (TH)

(TH, page 270 - Ex. 199, Boyce)[1]



B. Chord symbols

1. Key indication

As a general rule no key is indicated when a Roman numeral chord symbol analysis is given; this is true of exercises in a single key and also those involving modulation (see below). However, in the early part of the book (see pages 7, 11, etc.)[1] the following indication is given:

D minor
D major

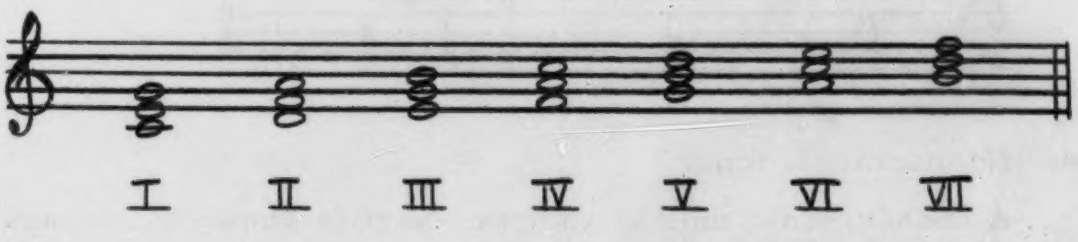
Later, (page 147)[1] the key of e minor is indicated:

E m:

These cases must, however, be looked upon as exceptional since the bulk of the examples and exercises show no indication of a key in the analysis.

2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.



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[1] Allen Forte, Tonal Harmony in Concept and Practice (New York: Holt, Rinehart and Winston, 1962). Used by permission.

FORTE (TH)

3. Inversions

The Arabic numerals from figured bass are combined with the Roman numeral chord symbol to show inversions.

A single figure is placed at the upper right side of the Roman numeral:

$$\mathrm{I}^{6} \quad \mathrm{VII}^{6}$$

The six-four chord is symbolized:

$$\mathrm{I}\ \underbrace{{}^{6}_{4}\ {}^{5}_{3}}_{\mathrm{V}}\ \mathrm{I}$$

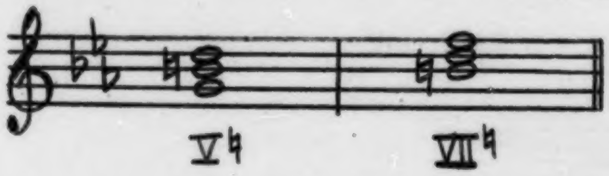
4. Seventh (ninth, etc.) chords

$$\mathrm{V}^{7} \quad \mathrm{V}^{6}_{5} \quad \mathrm{V}^{4}_{3} \quad \mathrm{V}^{4}_{2}$$

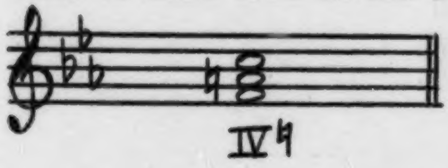
5. Altered tones

As a general premise, altered tones are indicated as they would be in figured bass, but there are several exceptions to this.

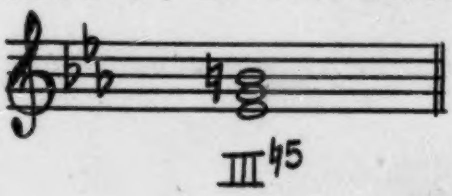
The raised leading tone in the minor key is indicated by an accidental following V or VII (see page 44)[1]:



This is also true of the raised sixth degree:



However, when the seventh degree is raised in III it is shown as:



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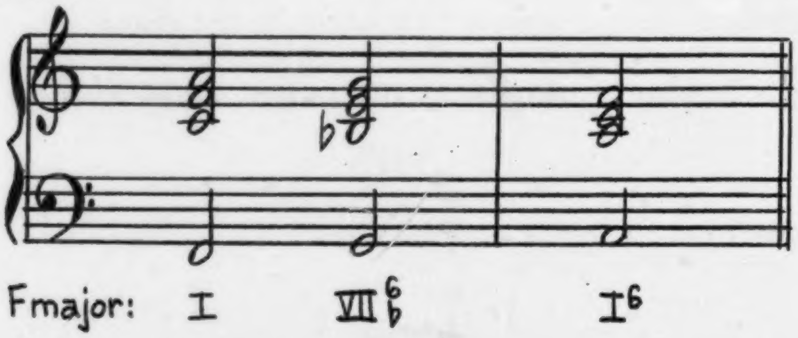
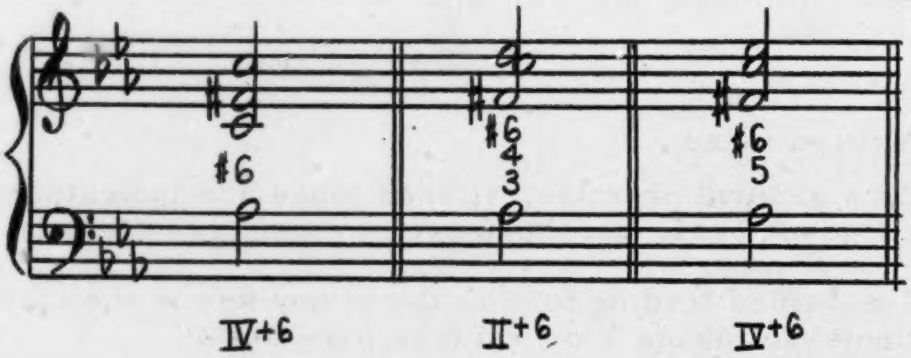
[1] Allen Forte, Tonal Harmony in Concept and Practice (New York: Holt, Rinehart and Winston, 1962). Used by permission.

FORTE (TH)

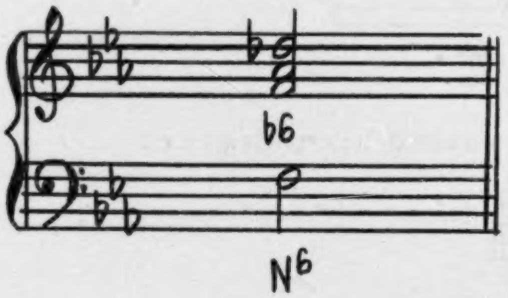
Other examples of altered tones usually follow the figured bass logic of using an accidental without a figure to refer to the third above the bass note:



The augmented sixth chords are symbolized both with the figured bass numerals and also as +6.



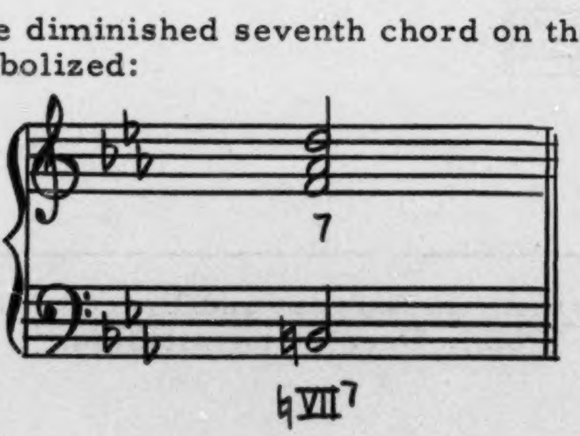
The Neapolitan sixth is symbolized:



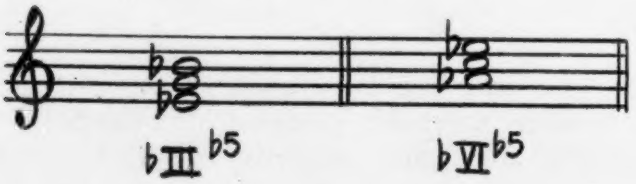
The diminished and half-diminished seventh chords are sometimes symbolized:

$^{\circ}7$ and $^{\phi}7$

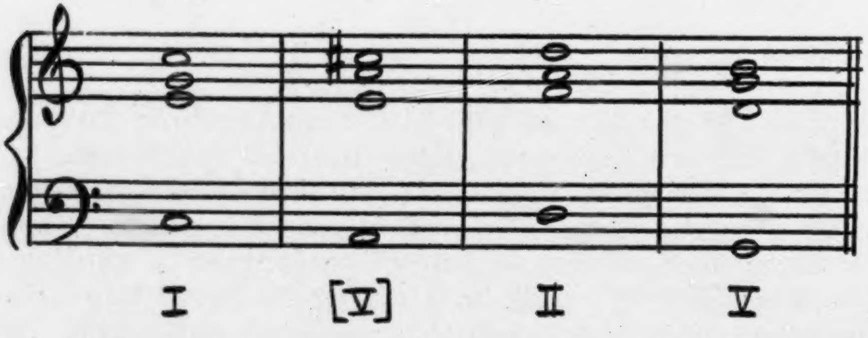
The diminished seventh chord on the raised seventh degree in minor is symbolized:



In general, an accidental preceding the Roman numeral affects the root of the chord:



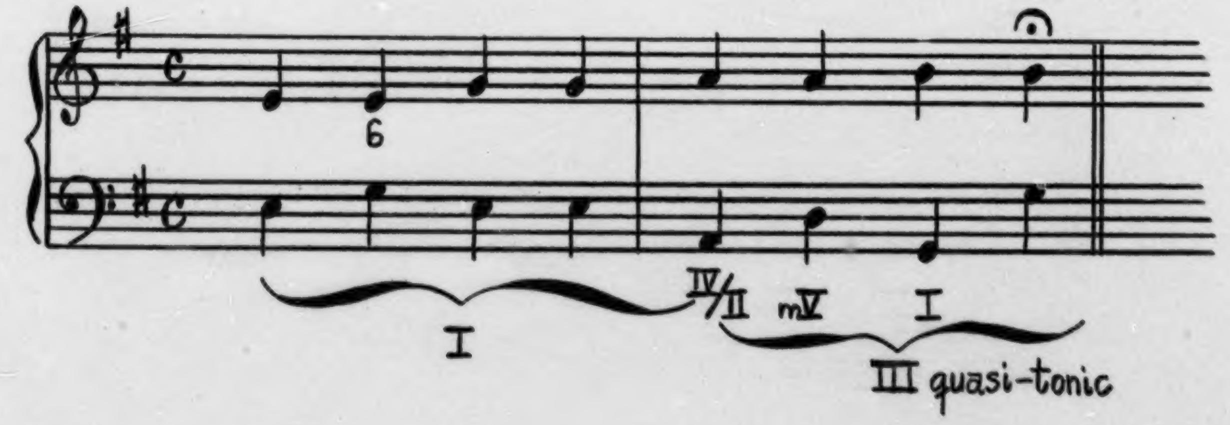
Secondary dominants are symbolized by being placed in square brackets [ ]:



6. Modulation

A modulatory progression is one which establishes a consonant chord in a semi-autonomous role which Forte calls a quasi-tonic. Modulation is to be regarded as a process of ordered harmonic extension rather than an arbitrary process in which there is a "change of key for the sake of variety." He defines diatonic and chromatic modulations somewhat differently than is usually done; a diatonic modulation is one made to a triad within the main tonality, while a chromatic modulation is one which is made to a triad based on a chromatic degree.

In producing a diatonic modulation three conditions are necessary: (1) the new quasi-tonic triad, preceded by (2) the modulating dominant and (3) the pivot chord. These are symbolized:



The pivot chord is thus symbolized IV/II, and is read "IV becoming II"; the m V signifies the "modulating dominant" chord of the new "quasi-tonic."

Examples are given showing modulations to each degree of the major and minor keys (which support consonant triads). "Incomplete modulation" occurs when a quasi-tonic is set up as a goal but is never reached; that is, the process may end with the new "modulating dominant" rather than the new tonic.

Various examples of chromatic modulation are discussed, but these require no new symbolization.

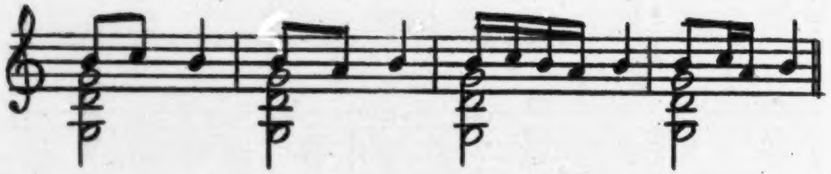
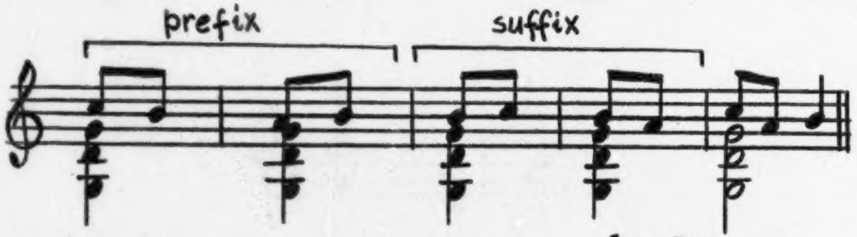
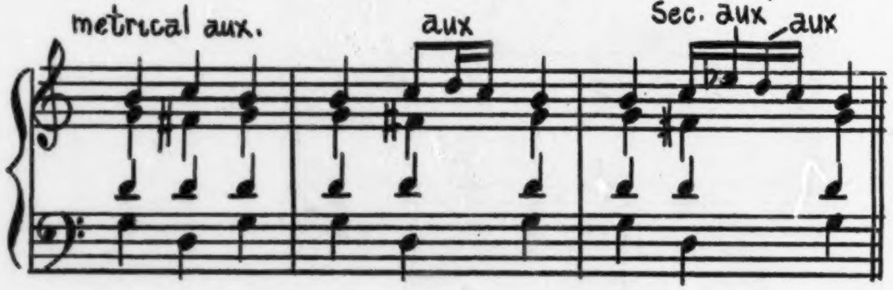
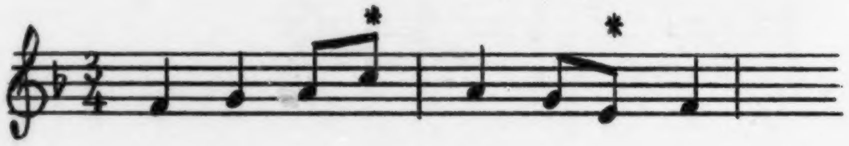
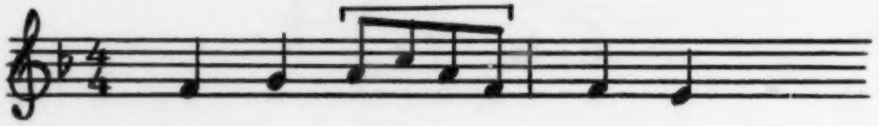
C. Nonharmonic tones

The more common definitions of melodic nonharmonic devices have usually involved one, or both, of two criteria: how the dissonant note is approached and left, and whether or not it is accented. Schenker's concept of analysis attempts to describe how the harmonic structure of a piece of music is elaborated, and in doing this terms which were formerly used to describe melodic phenomena exclusively, now on a different level begin to describe how harmonies operate. Forte follows this general approach, and, although he uses conventional terms such as passing note, auxiliary note, suspension, etc., he frequently combines these with other concepts to produce terms such as "linear chord," "incomplete auxiliary," "secondary auxiliary," etc. It would be misleading to attempt to discuss this entire analytical approach here under the heading of "nonharmonic tones"; all that will be given here is a list of the original devices from which the compound terms are made.

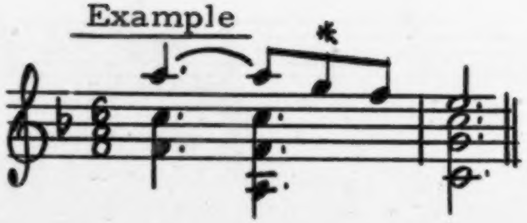
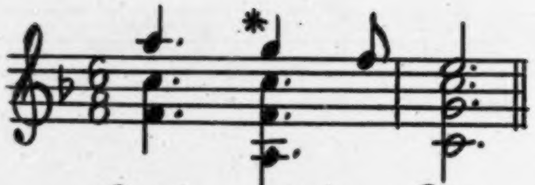
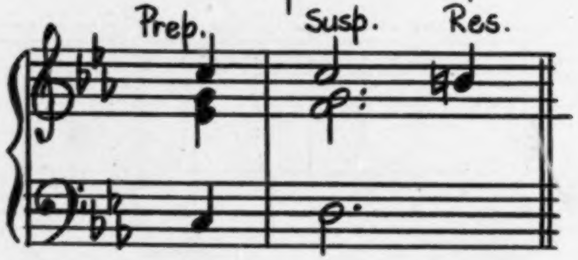
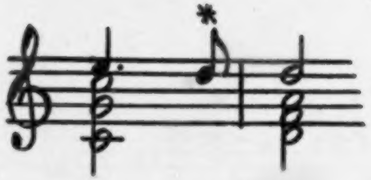
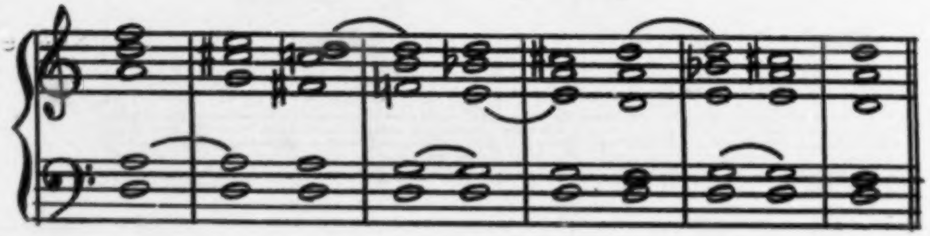
Forte objects to the terms "unessential" and "nonharmonic" to describe melodic embellishments; he prefers the term "submetrical embellishment." This embellishment may take place in three ways: by auxiliary note, by skip (arpeggiation), and by passing note (which fills in a skip).

FORTE (TH)

C. Nonharmonic tones

Name	Abbreviation		Remarks
Complete auxiliary note	aux.		Returns to principal note
Incomplete auxiliary note (Prefix type which occurs on the accent is called an appoggiatura)			Precedes or follows principal note
Secondary auxiliary note			An auxiliary to an auxiliary
Incomplete arpeggiation			Single skips for rhythmic reasons
Complete arpeggiation (This often results in "compound melody," i.e., a melody which skips to other harmonic strata or levels.)			Involves the complete chord

C. Nonharmonic tones (cont.)

Name	Abbreviation	Example	Remarks
Unaccented passing note	pn		Unaccented
Accented passing note			Accented
Suspension			Tied or repeated note
Anticipation			
Pedal-point		Example 462 	Over I or V

(Echappée, escape tone, changing tones and retardation are not used. See the text for the following compound terms: Obligatory auxiliary and passing notes, Concealed passing notes, Submetrical suspensions and anticipations.)

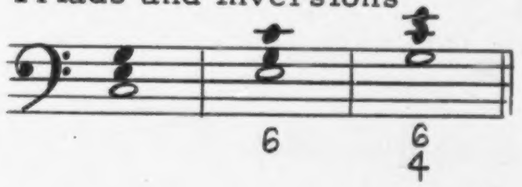
GOETSCHIUS (MUMC)

It would be difficult to estimate the extent of the influence of this book upon the study of music theory in this country a generation or more ago. It will be sufficient to say that this influence was considerable and that many of the newer theory texts owe a great deal to Goetschius, even though the present authors may be unaware of this indebtedness. Important ideas of both pedagogy and symbolization have been subtly transmitted by this work from the 1880's, when the first edition appeared, through many teacher-pupil generations, down to the present day.

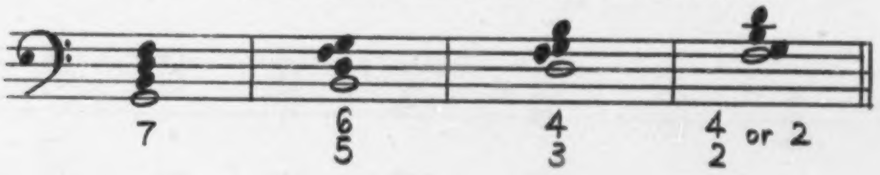
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions

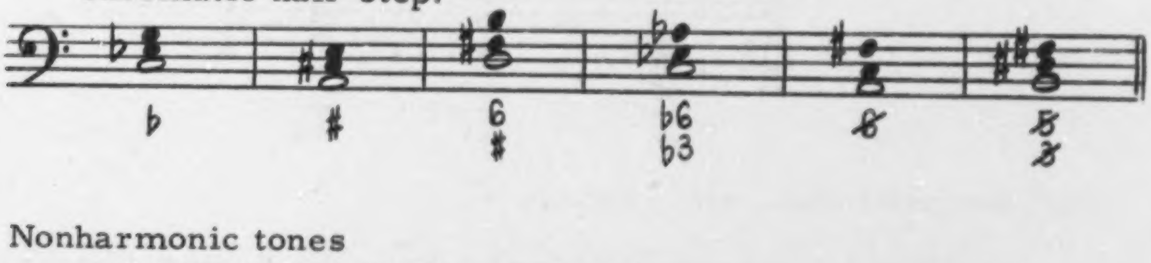


2. Seventh (ninth, etc.) chords and inversions



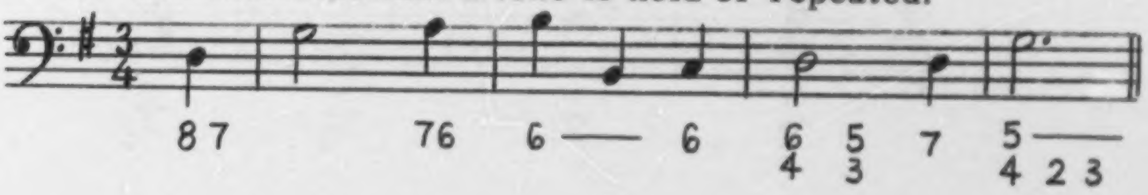
3. Altered tones

a. An accidental without a figure refers to the third above the bass note.
b. Accidentals precede the figures affected.
c. The slanting stroke (6̸) indicates that a tone is raised a chromatic half-step.



4. Nonharmonic tones

a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
b. A dash indicates that a tone is held or repeated.



B. Chord symbols

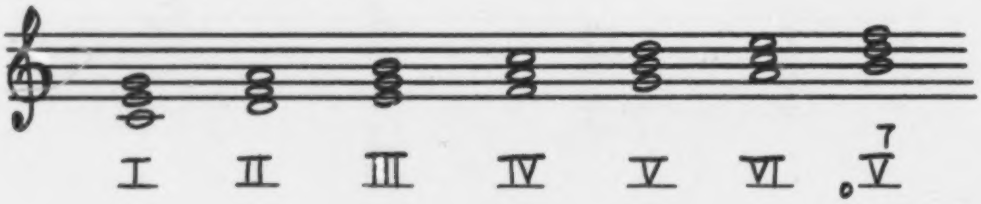
Immanuel Faisst, Goetschius' teacher, writing in the Preface to the first edition, claims to have originated this "method" of theory instruction in 1847. One of the points which Dr. Faisst specifically enumerates as having been originated by him is the "absolute" figuring for all chords; that is, the system used by Goetschius and described below, of designating chords by numbers, without the necessity of a bass part.

1. Key indication

   a. A capital letter indicates a major key.
      C B♭ F♯
   b. A small letter indicates a minor key.
      c b♭ f♯

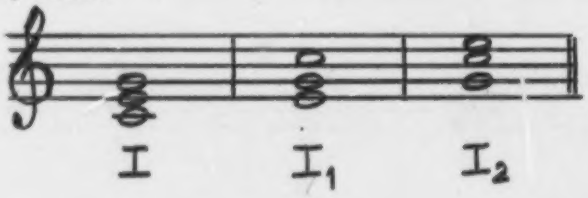
2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads; the triad on the leading-tone is always symbolized as "an incomplete dominant seventh chord," never as VII.



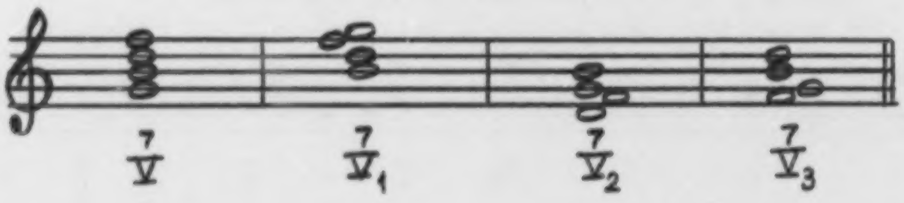
3. Inversions

Inversions are indicated by small Arabic numerals placed to the lower right of the Roman numeral; 1 means first inversion, 2 means second inversion, etc.



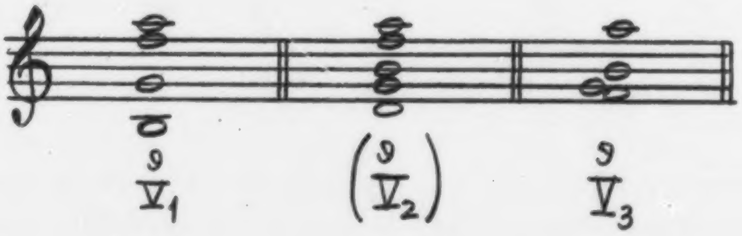
4. Seventh (ninth, etc.) chords

The 7 and 9 are added directly above the Roman numeral; the inversions are indicated as explained above.

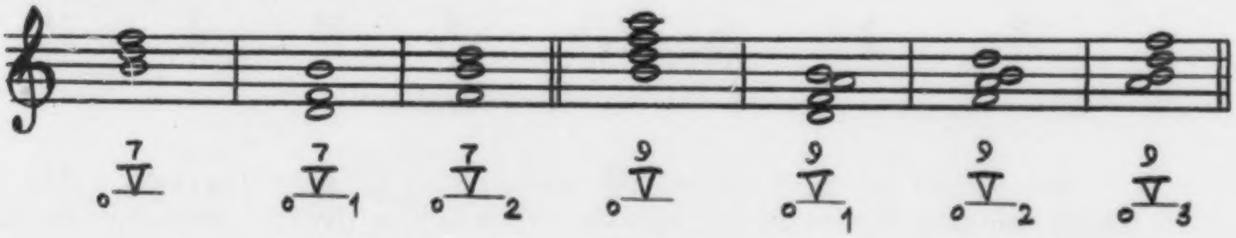


GOETSCHIUS (MUMC)

The ninth is the highest dischord treated in this book; the first and third inversions are recommended, the second inversion being possible only in five-part harmony; the fourth inversion, "involving an inversion of the nine-tone interval, is an absurdity," (page 91)[1] and therefore forbidden.



The leading-tone seventh chords in major and minor are symbolized as incomplete dominant ninth chords. The circle placed at the lower left of the Roman numeral always indicates the omission of the root of the chord. However, inversions are not reckoned from the "actual root" but from the "apparent root," that is, the third of the incomplete dominant chord.



${}_{\circ}\overset{7}{V}$
${}_{\circ}\overset{7}{V}_1$
${}_{\circ}\overset{7}{V}_2$
${}_{\circ}\overset{9}{V}$
${}_{\circ}\overset{9}{V}_1$
${}_{\circ}\overset{9}{V}_2$
${}_{\circ}\overset{9}{V}_3$

5. Altered tones

Chromatically altered tones may produce a modulation to another key or they may produce what are called "altered" or "mixed" chords.

Altered chords have a "legitimate chord-form," i.e., they sound like an "authentic" chord in some other key. Mixed chords, on the other hand, have an "illegitimate chord-form" and do not occur as diatonic chords in any key. Both altered and mixed chords are symbolized by the addition of the appropriate accidental, directly above the Roman numeral. Unfortunately, since Goetschius recognizes only certain alterations as legitimate, the system of showing altered notes is not worked out in a logical fashion so that all alterations could be expressed. This means that the given symbolization for the few acceptable altered chords must be memorized. To illustrate, Goetschius says that the sixth scale step in the major key is the only degree which can be lowered. This produces the following chords; the flat indicates the lowered scale step:

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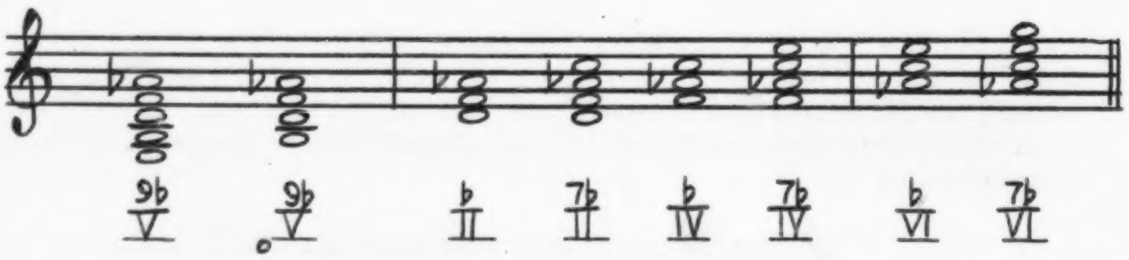
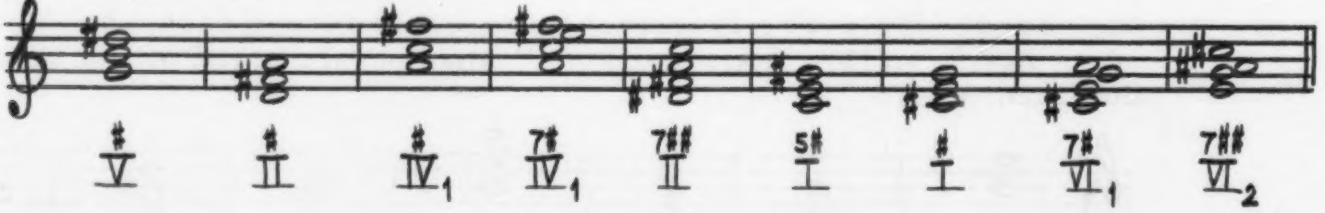
[1] Percy Goetschius. The Material Used in Musical Composition. (New York: G. Schirmer, Inc., 1895). Used by permission.

GOETSCHIUS (MUMC)



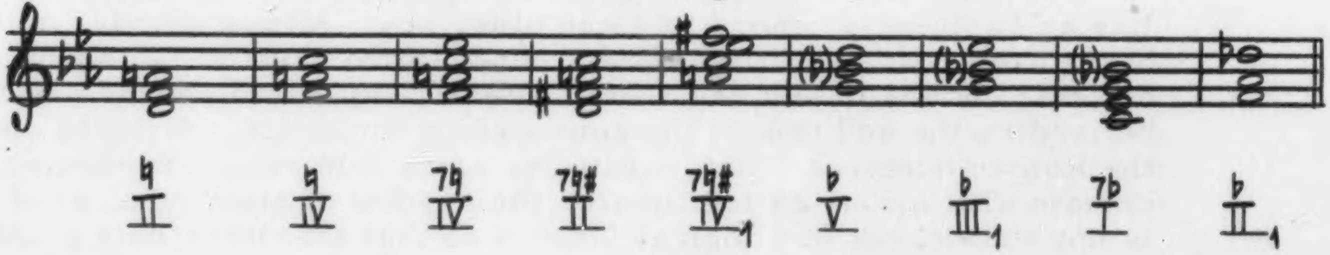
The last three chords are "possible, but very rare." This, of course, does not recognize the possibility of a Neapolitan chord in major, or that the seventh degree might be lowered.

In major, the first, second, fifth and sixth scale steps may be raised under certain specific conditions. Some of the possible chords, with the given symbolizations, are:



Note that in the I chord 5♯ means the fifth is raised, while the ♯ alone means the root is raised; two sharps means two chord members are altered. The indications for the seventh chord and the inversions remain unchanged. Actual accidentals used in a particular key are used in the chord symbol; this means the chord symbol is slightly different depending upon the given key signature.

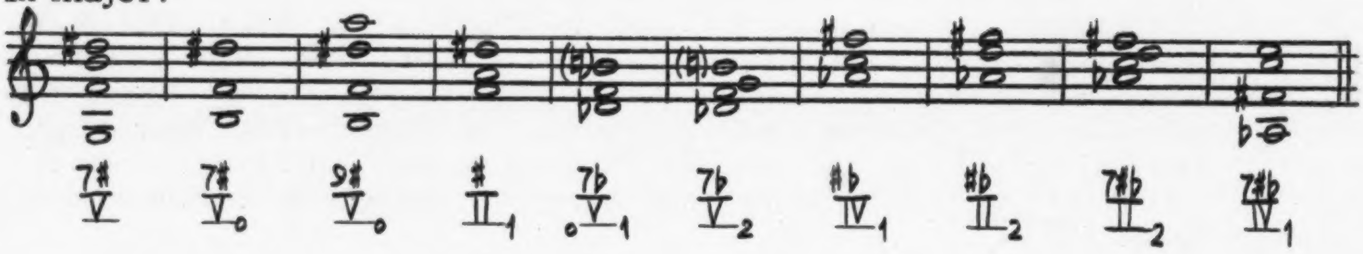
In the minor key only the following alterations are recognized: the raised sixth degree, the raised fourth degree, the lowered (natural) leading-tone and the lowered second degree.



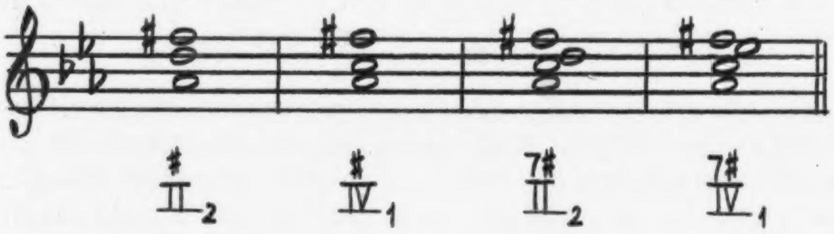
In discussing the "mixed chords" (augmented sixth chords) the student is warned against inverting the augmented sixth into a diminished third. Goetschius gives both the augmented sixth chords which resolve to the tonic, those he calls "chords of the First Class," and those that resolve to the dominant, "chords of the Second Class."

GOETSCHIUS (MUMC)

In major:


7# V
7# V0
9# V0
# II1
7b oV1
7b V2
#b IV1
#b II2
7#b II2
7#b IV1

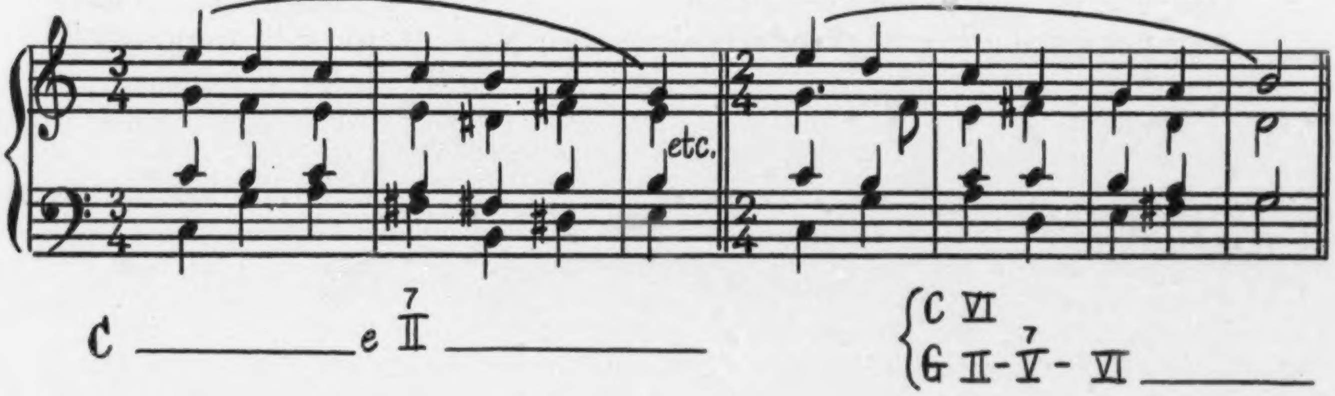
In minor only second class chords are given:


# II2
# IV1
7# II2
7# IV1

6. Modulation

Modulation is shown in one of two ways, either a common chord is shown with a dual analysis, or the analysis begins directly in the new key.

(MUMC, page 143 - Ex. 212)[1] (MUMC, page 142 - Ex. 211)[1]


etc.
C ________ e II 7 __________
C VI
G II - V 7 - VI _______

C. Nonharmonic tones

Contrary to the more recent theory books, Goetschius does not introduce the nonharmonic (inharmonic) tones until Part IV of the book. By that time all of the harmonic material through ninth chords has been presented. His classification of these devices is interesting:

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[1] Percy Goetschius. The Material Used in Musical Composition. (New York: G. Schirmer, Inc., 1895). Used by permission.

GOETSCHIUS (MUMC)

"There are four kinds of Inharmonic tones: the Organ-point, the Suspension, the Anticipation, and the Neighboring-Note; which are distinguished according to the manner in which they enter and progress. They may also be divided into three groups, as follows: The Organ-point is a *heavy* (long) embillishment, the Neighboring-Note a *light* (short) embellishment, and the Suspension and Anticipation result from partial *mixture* of a Chord with those which precede or follow it." (page 185)[1]

Before illustrating these points and closing the discussion of this book, the present author cannot refrain from quoting some advice from the Appendix where Goetschius has presented some musical excerpts from what was, in 1889, contemporary or modern music.

"The chief and deplorably common error in modern Composition is the inclination to employ eccentric and complex harmonies, in endless succession, without relaxation or rest, and with studied evasion of vulgar 'Resolutions'; partly in obedience to the Spirit of the Age, partly in the ambition of producing something 'Original'." -- The scholar "is warmly recommended to adopt Haydn, Mozart and Beethoven as his models, in preference to such adventurous explorers as Schumann, Chopin, etc." And, after presenting two excerpts from "Flying Dutchman" and "Walküre," he says: "The scholar is strenuously warned against imitating such fantastical and adventurous harmonic successions as these last two Examples of Wagner. They are noted down here as interesting illustrations of what a highly imaginative mind has succeeded in extorting from the natural resources of tone-combination and progression, with a tolerable show of plausibility. Their influence upon the beginner is undeniably pernicious." (page 207)[1]

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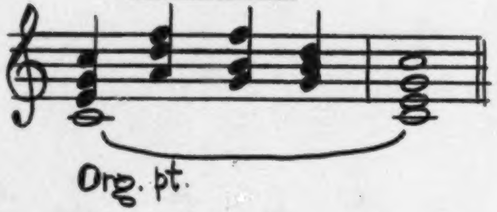
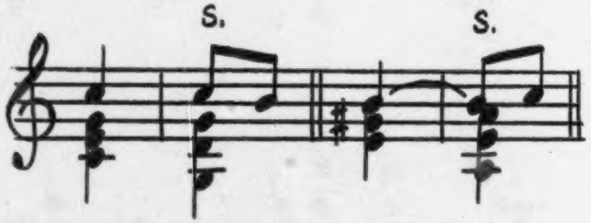
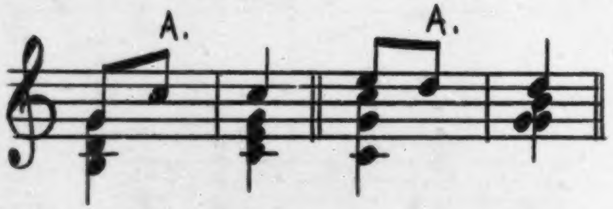
[1] Percy Goetschius. *The Material Used in Musical Composition.* (New York: G. Schirmer, Inc., 1895). Used by permission.

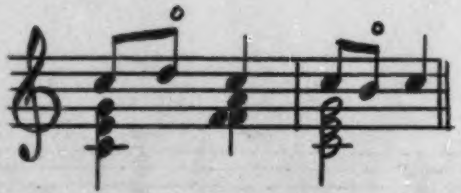
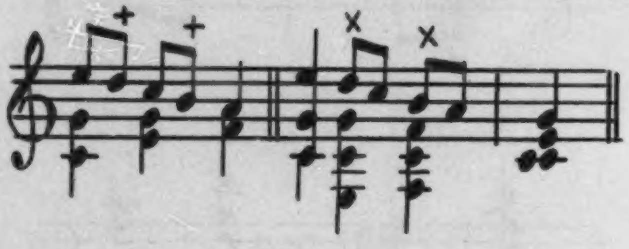
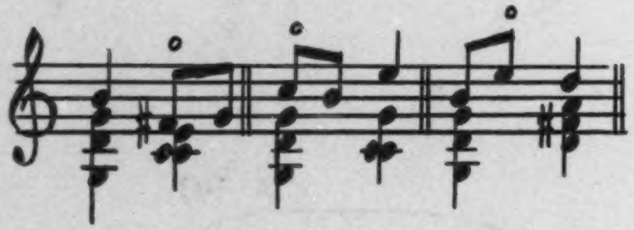
GOETSCHIUS (MUMC)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Organ-point (Usually: Tonic Dominant Mediant)	Org. -pt.		Held tone - member of first and last chords		
Suspension	S.		By tied or repeated note	By step	Up or down
Anticipation	A.		By step or leap	By repeated note	Same tone

GOETSCHIUS (MUMC)

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Neighboring-notes:					
a. Neighboring-note or embellishment	o		By step	By step	Opposite to approach
b. Passing-note Accented Unaccented	 x +		By step	By step	Same as approach
c. Appoggiatura (Irregular neighbor-note)	o		By leap or first note	By step	Usually opposite to approach

HANSON (HMMM)

Special Area Book

This book is not concerned with the usual rudiments of music theory, notation, terms, etc.; it is, rather, a dictionary of the tonal resources which are available to the composer. It presupposes a background in conventional music theory and, except for a few general suggestions, it is not concerned with the aesthetic uses to which a composer might put the raw material which it systematizes. The book uses conventional staff notation, but it also originates some terms and symbols which must be known if the book is to be useful to the composer or theorist.

While this original symbolization is quite different from that generally covered in this study, it is being included here because it calls attention to some important concepts which have not been effectively symbolized before. The tonal material which it treats is that of the equal tempered scale, and a chart at the end of the book shows all of the sonority relationships which are possible within this twelve-tone framework.

Terms and Symbols

1. Sonority - a combination of two or more tones. The tone relationships between the component parts of a sonority are the same whether they are sounded consecutively (melodically) or simultaneously (harmonically).

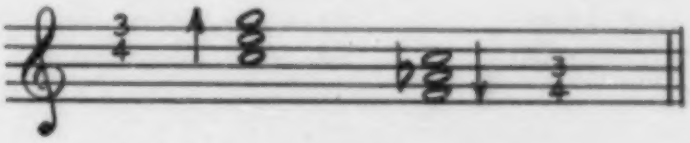
2. Interval analysis - the reduction of the tone relationships found in a sonority to the six basic interval categories given below (see No. 7).

3. Projection - the construction of sonorities from given intervals by any logical and consistent process of addition or repetition.

4. Involution - the use of specified ascending intervals in descending order, or vice versa; may also be termed inversion. There are three types of involutions:

   a. Simple involution - the inverted sonority has a different type of sound from the given sonority.

(HMMM, page 18 - Ex. 3-2)[1]



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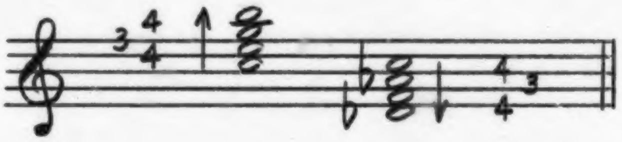
[1] Howard Hanson, Harmonic Materials of Modern Music (New York: Appleton-Century-Crofts, Inc., 1960). Used by permission.

(The arrows indicate the direction of construction; the numerals indicate the number of half-steps between tones.)

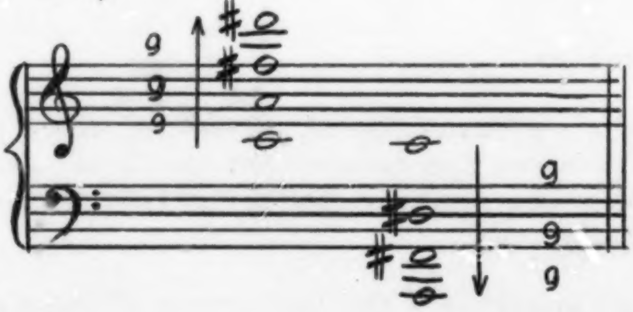
b. Isometric involution - the inverted or involuted sonority has the same type of sound as the original sonority.

(HMMM, page 18 - Ex. 3-3)[1]



c. Enharmonic involution - the involuted sonority contains the same tones as the original sonority.

(HMMM, page 19 - Ex. 3-4)[1]



5. Complementary scales - the relationship between any given series of tones and the remaining tones of the twelve-tone scale.

6. Sonority names - Hanson uses the following names for any type of sonority with the indicated number of different tones:

doad:	2-tone sonority
triad:	3-tone sonority
tetrad:	4-tone sonority
pentad:	5-tone sonority
hexad:	6-tone sonority
heptad:	7-tone sonority
octad:	8-tone sonority
nonad:	9-tone sonority
decad:	10-tone sonority
undecad:	11-tone sonority
duodecad:	12-tone sonority

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[1] Howard Hanson, Harmonic Materials of Modern Music (New York: Appleton-Century-Crofts, Inc., 1960). Used by permission.

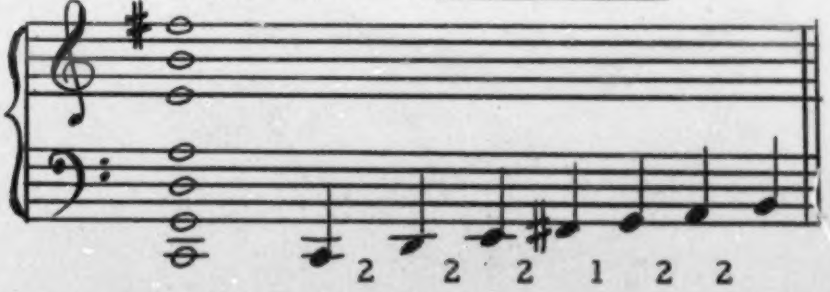
7. Symbolization of intervals - disregarding inversion and transposition, Hanson reduces interval relationships to six. These six basic intervals are symbolized by the following arbitrarily chosen letters:

p	perfect fifth perfect fourth
m	major third minor sixth
n	minor third major sixth
s	major second minor seventh
d	minor second major seventh
t	augmented fourth diminished fifth

These are arranged in the following order above a scale, chord or sonority to show its intervallic content. The letter alone indicates one of the specified intervals; if more than one interval is present, this is shown by the appropriate superscript.

(HMMM, page 29 - Ex. 4-5)[1]

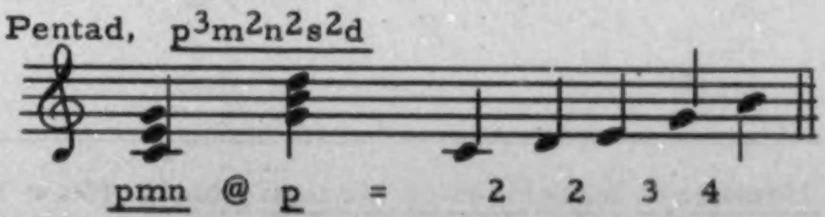
Perfect Fifth Heptad, $\underline{p^6m^3n^4s^5d^2t}$



8. Symbolization of Projection - the triad pmn projected at the interval of the perfect fifth is symbolized:

(HMMM, page 167 - Ex. 22-1)[1]

Pentad, $\underline{p^3m^2n^2s^2d}$



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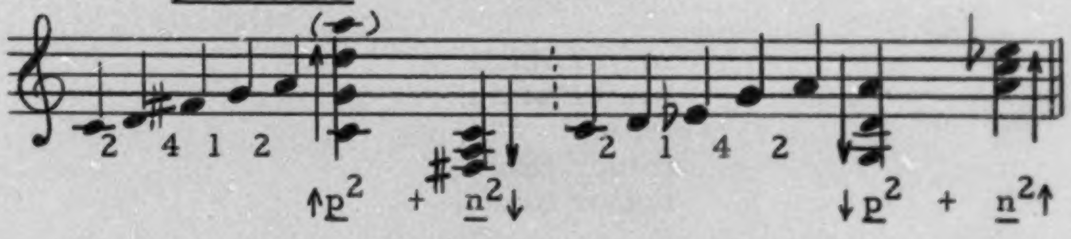
[1] Howard Hanson, Harmonic Materials of Modern Music (New York: Appleton-Century-Crofts, Inc., 1960). Used by permission.

HANSON (HMMM) SAB

The simultaneous projection of two sonorities is shown by the plus sign (+). For example, the simultaneous projection of two perfect fifths above, and two minor thirds below C would be:

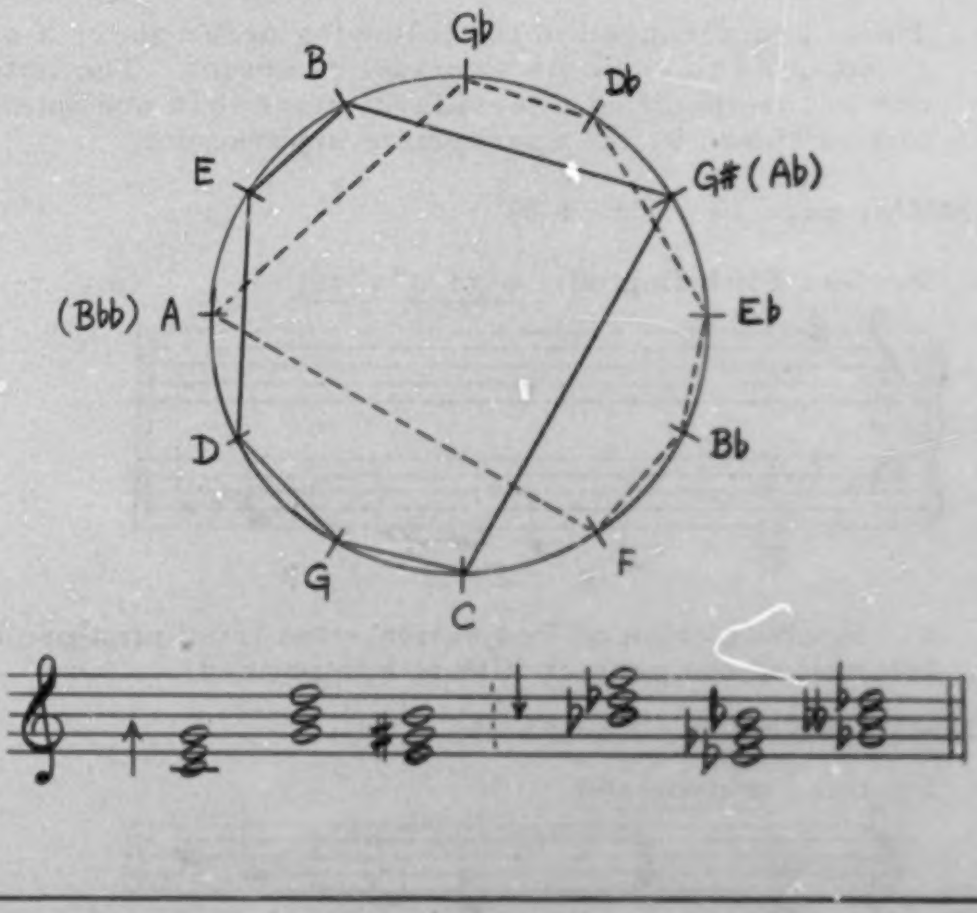
(HMMM, page 196 - Ex. 27-4)[1]

Pentad, $p^3mn^2s^2dt$ and involution



9. Circular graphs - in addition to staff notation, the author frequently symbolizes a phenomenon in graphic terms using the circle of fifths. For example, the graphic symbolization of two complementary hexads made of major triads shows very clearly how the second sonority mirrors the first.

(HMMM, page 251 - Ex. 38-5)[1]



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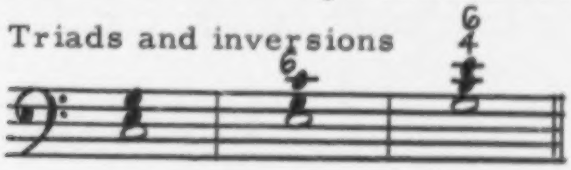
[1] Howard Hanson, Harmonic Materials of Modern Music (New York: Appleton-Century-Crofts, Inc., 1960). Used by permission.

HEACOX (HEEK)

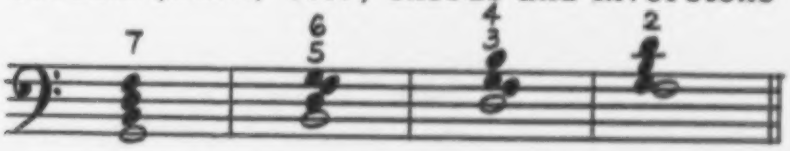
A. Figured bass

Arabic numerals are placed above the bass part.

1. Triads and inversions

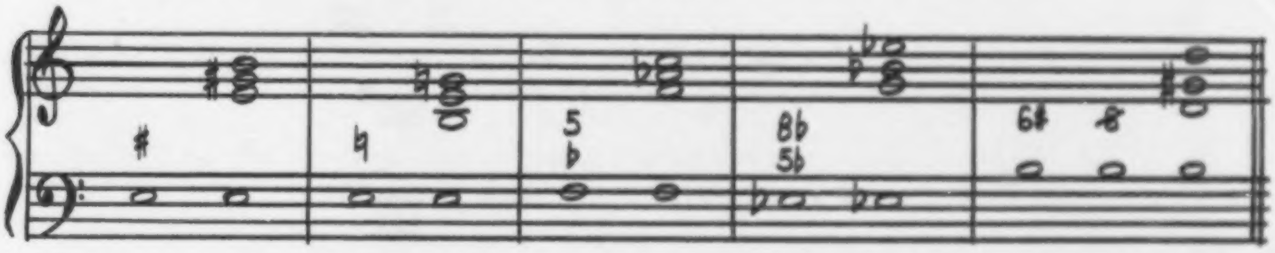


2. Seventh (ninth, etc.) chords and inversions



3. Altered tones
   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals follow the figures affected.
   c. The slanting stroke (6̸) indicates that a tone is raised a chromatic half-step.

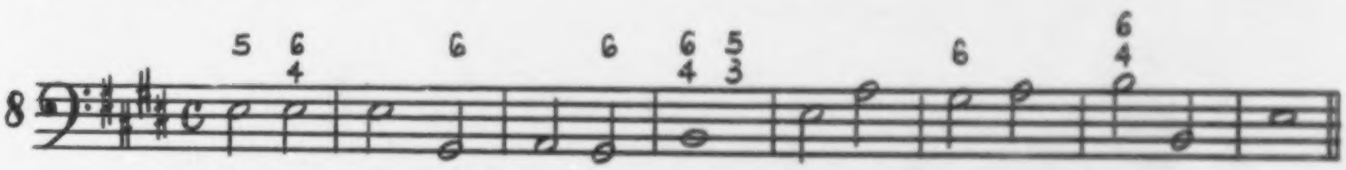
(HEEK, page 48 - 1st music example)[1]



4. Nonharmonic tones

Nonharmonic motion in upper parts is indicated by vertical alignment; however, there are few examples of this in the exercises.

(HEEK, page 70 - Ex. 8)[1]



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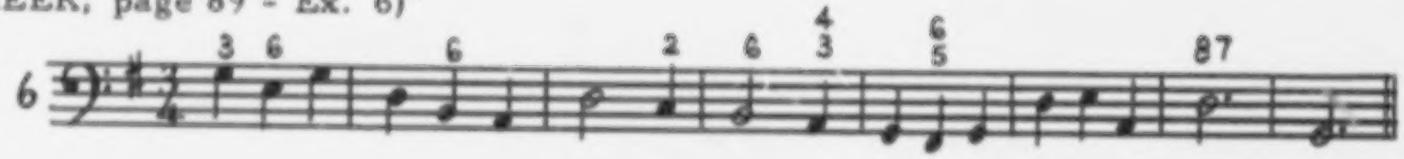
[1] Arthur E. Heacox, Harmony for Ear, Eye, and Keyboard, First Year (Bryn Mawr, Pennsylvania: Theodore Presser Co., Sole Representative, 1923). Used by permission.

HEACOX (HEEK)

(HEEK, page 89 - Ex. 6)[1]



B. Chord symbols

1. Key indication

a. A capital letter (with or without a colon) indicates a major key.
C: B♭: F♯:

b. A small letter (with or without a colon) indicates a minor key.
c b♭ f♯:

2. The Roman numeral chord symbol (triads)

The quality of each triad type is shown by the Roman numeral symbol as follows:

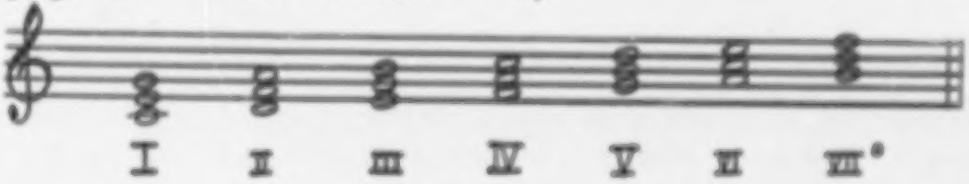
a. A large Roman numeral indicates a major triad.
I V

b. A small capital Roman numeral indicates a minor triad.
II III

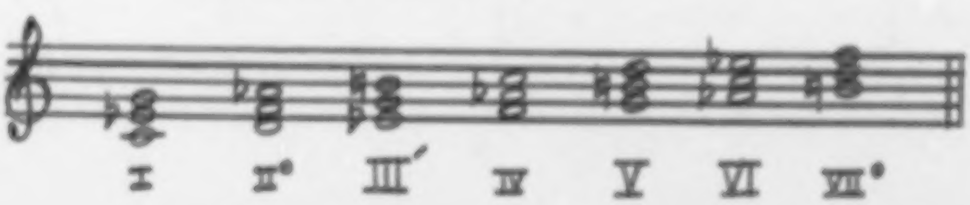
c. A small capital Roman numeral with a circle (°) at the upper right indicates a diminished triad.
VII°

d. A large Roman numeral with the acute accent (´) at the upper right indicates an augmented triad.
III´

(HEEK, page 81 - Scale of triads in C)[1]



(HEEK, page 81 - Scale of triads in c)[1]



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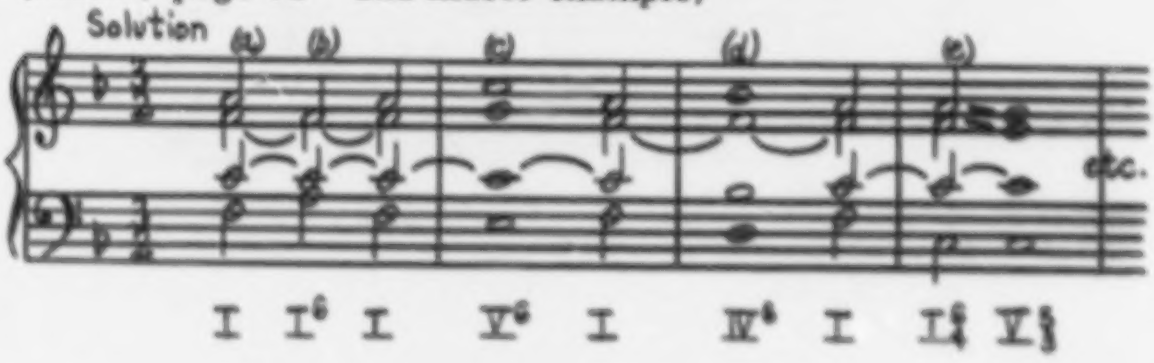
[1] Arthur E. Heacox, Harmony for Ear, Eye, and Keyboard, First Year (Bryn Mawr, Pennsylvania: Theodore Presser Co., Sole Representative, 1923). Used by permission.

HEACOX (HEEK)

3. Inversions

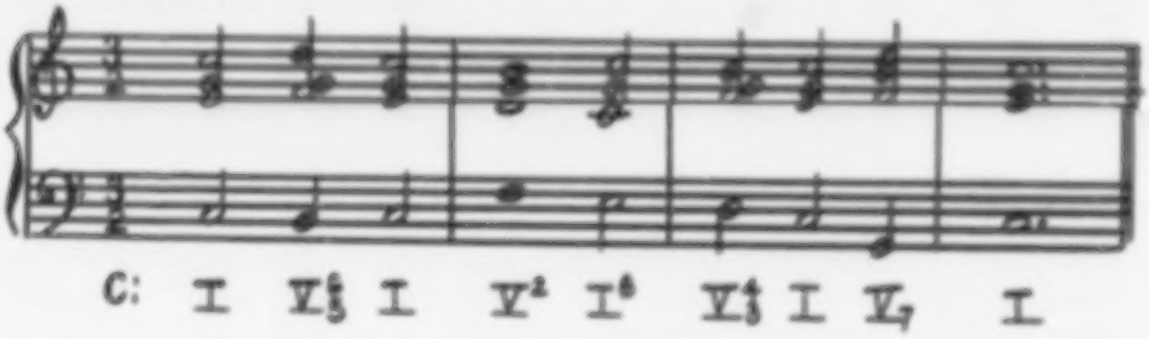
Inversions are shown by placing the Arabic figures (from figured bass) to the upper right or to the right of the Roman numeral.

(HEEK, page 52 - 2nd music example)[1]



4. Seventh (ninth, etc.) chords

(HEEK, page 78 - Ex. 29)[1]



The Roman numeral analysis has been added to the above exercise. In general, although some exceptions occur, a single Arabic figure, such as 6 or 2, is placed to the upper right of the Roman numeral (I^6, V^2); two figures, such as $\frac{6}{5}$ or $\frac{4}{3}$, are placed to the right of the Roman numeral (V^6_5, V^4_3); the figure 7 is placed to the lower right of the Roman numeral (V_7).

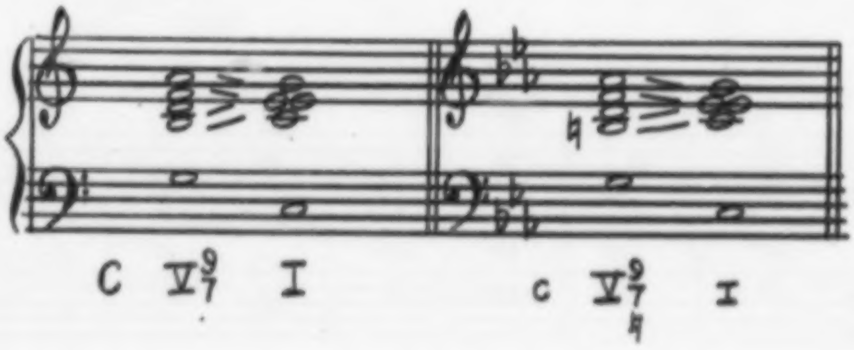
---

[1] Arthur E. Heacox, *Harmony for Ear, Eye, and Keyboard*, First Year (Bryn Mawr, Pennsylvania: Theodore Presser Co., Sole Representative, 1923). Used by permission.

HEACOX (HEEK)

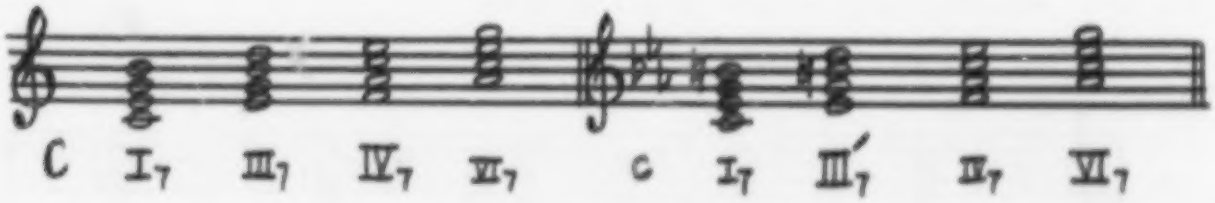
The dominant ninth chord is presented in root position only.

(HEEK, page 160 - Ex. 68)[1]

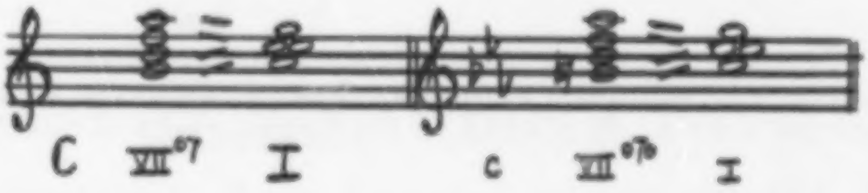


The secondary sevenths are symbolized:

(HEEK, page 163)[1]



While the leading tone seventh chord is explained as originating as "the dominant ninth with the root omitted," (page 163)[1] this chord is symbolized as a seventh chord.



Higher dominant discords, such as the eleventh and thirteenth chords are not discussed.

5. Altered tones

Since this text is designed for the first year of harmony, there is very little emphasis placed upon chromatically altered chords.

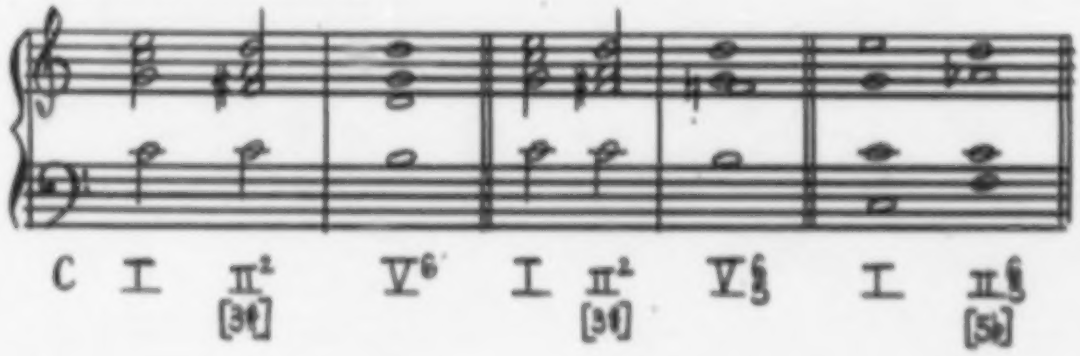
---

[1] Arthur E. Heacox, Harmony for Ear, Eye, and Keyboard, First Year (Bryn Mawr, Pennsylvania: Theodore Presser Co., Sole Representative, 1923). Used by permission.

HEACOX (HEEK)

The only alterations discussed are those made to the supertonic chord. The alteration, expressed with the correct accidental and in relation to the chord root (not the bass note), is placed in brackets under the Roman numeral.

(HEEK, page 166 - Ex. 73)[1]

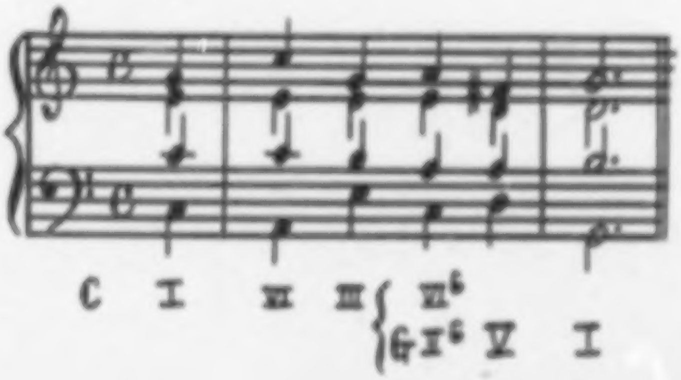


The Neapolitan 6th and the augmented 6th chords are not discussed in this text. The only other altered chord found is the diminished seventh chord on the leading tone in major. This is symbolized according to the general principles just given: VII^{o}_{7} [7♭]

6. Modulation

The process of modulation is discussed at length and includes the idea of "transient modulation" as well as the modulation in which the new key is securely established by a strong cadence. However, the symbolization used is always one of the two types given below. The common chord modulation shows the pivot chord in both keys, while the chromatic modulation begins directly in the new key.

(HEEK, page 120 - Ex. 56 (b))[1]



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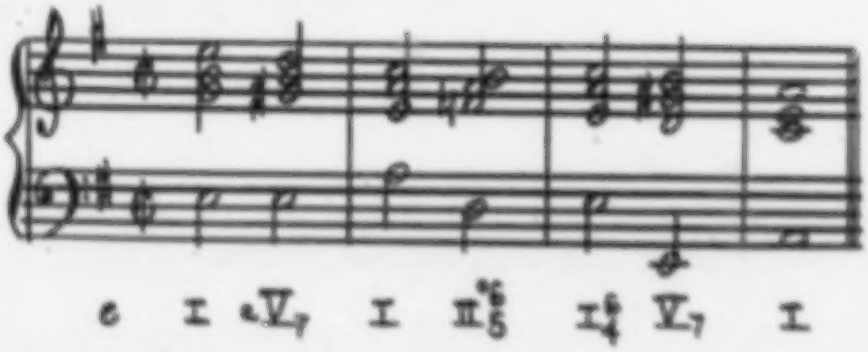
[1] Arthur E. Heacox, Harmony for Ear, Eye, and Keyboard, First Year (Bryn Mawr, Pennsylvania: Theodore Presser Co., Sole Representative, 1923). Used by permission.

HEACOX (HEEK)

(HEEK, page 114 - Ex. 53)[1]



C. Nonharmonic tones

Heacox limits his discussion of "unessential" tones to four; the passing tone, embellishment (neighboring tone), suspension and appoggiatura. All of these, except the suspension, may be accented or unaccented. The suspension, or upward resolving retardation, is accented, but it may be a tied or a repeated note.

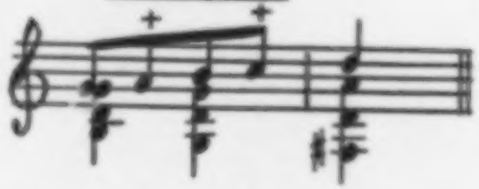
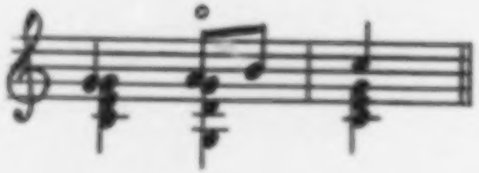
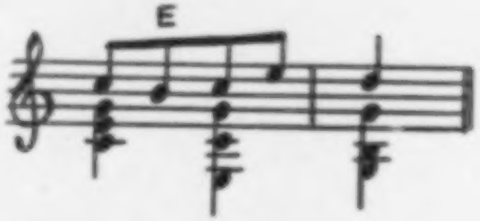
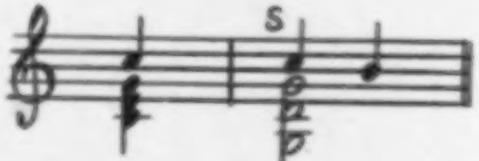
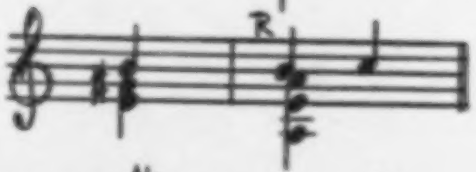
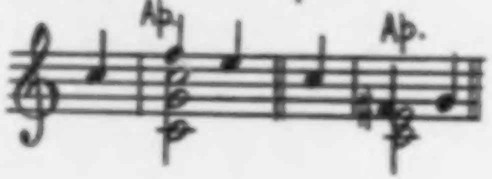
No mention is made of escape tone, changing tones, anticipation or pedal point.

---

[1] Arthur E. Heacox, Harmony for Ear, Eye, and Keyboard, First Year (Bryn Mawr, Pennsylvania: Theodore Presser Co., Sole Representative, 1923). Used by permission.

HEACOX (HEEK)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing tone (unaccented)	+		By step	By step	Same as approach
Passing tone (accented)	o		By step	By step	Same as approach
Embellishment (accented or unaccented)	E		By step	By step	Opposite to approach
Suspension	S		By same note	By step	Down
Retardation	R		By same note	By step	Up
Appoggiatura	Ap.		By skip	By step	Opposite to approach

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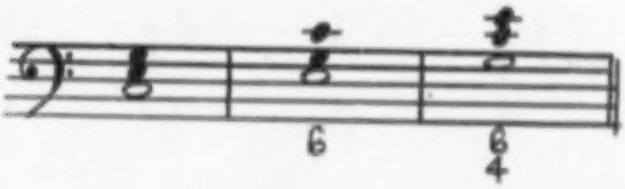
HINDEMITH (TH)

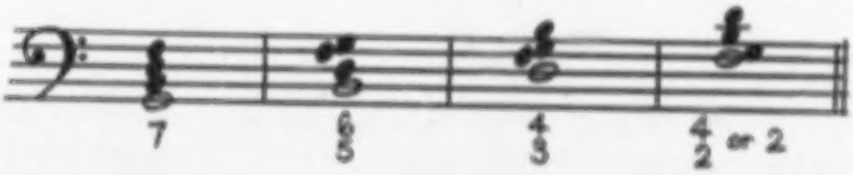
A. Figured bass

Arabic numerals are placed below the bass part.

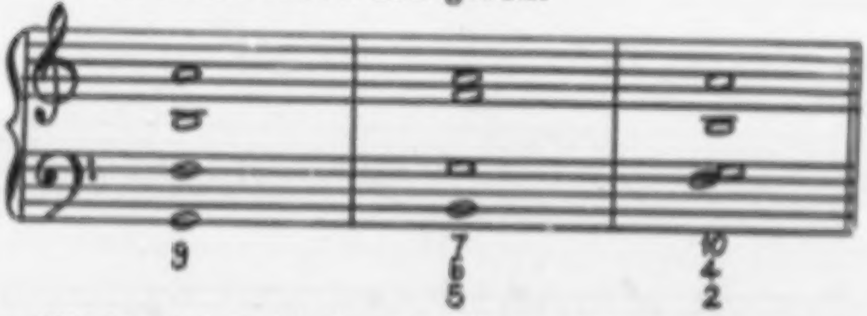
1. Triads and inversions



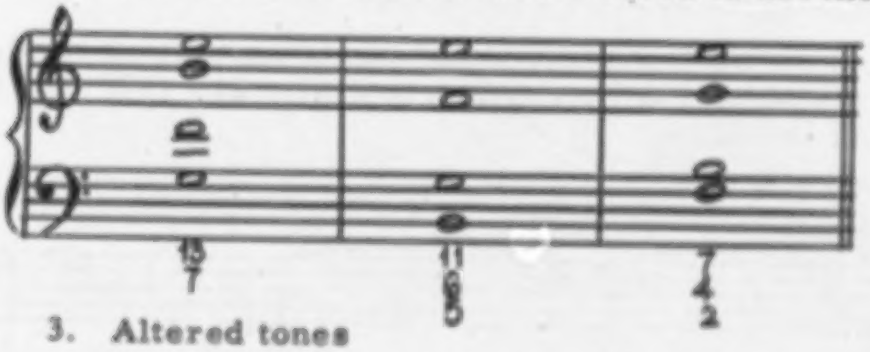
2. Seventh (ninth, etc.) chords and inversions



In addition to the root position, the two most common inversions of the ninth chord are given.



Hindemith calls the dominant thirteenth chord a "dominant seventh chord with sixth," that is, the fifth of the chord is replaced by a sixth. The dominant eleventh chord is not mentioned.



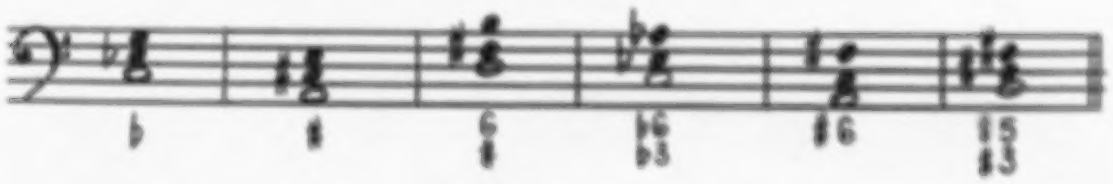
3. Altered tones

Hindemith states that in past times altered tones were indicated in the figured bass by special signs such as 6⃥, 4+ ; however, since these were not used consistently by all composers he prefers the usual accidentals ♯ , ♭ , ♮ , 𝄪 , and 𝄫 . (See page 66)[1]

---

[1] Paul Hindemith. Traditional Harmony, Book I (c) 1943, 1944 by B. Schott's Soehne, Mainz. Used by permission of Associated Music Publishers, Inc., New York.

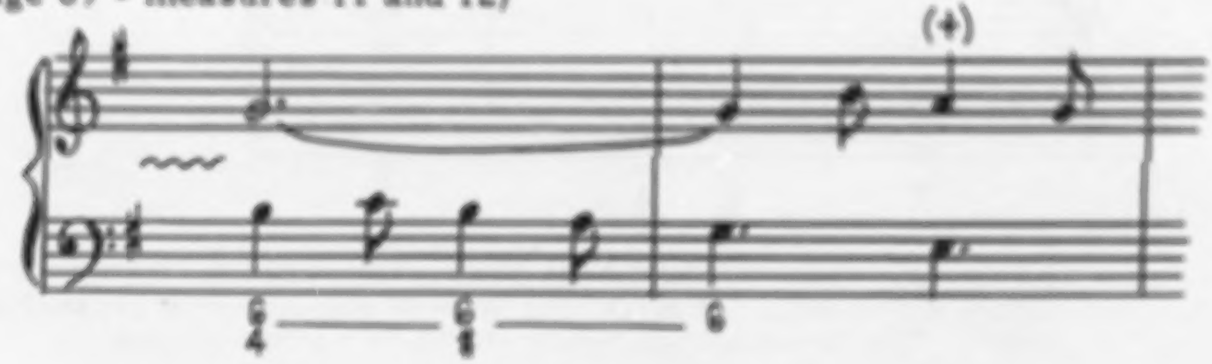
a. An accidental without a figure refers to the third above the bass tone.
b. Accidentals precede the figures affected.
c. The slanting stroke (6̸) is not used.



4. Nonharmonic tones

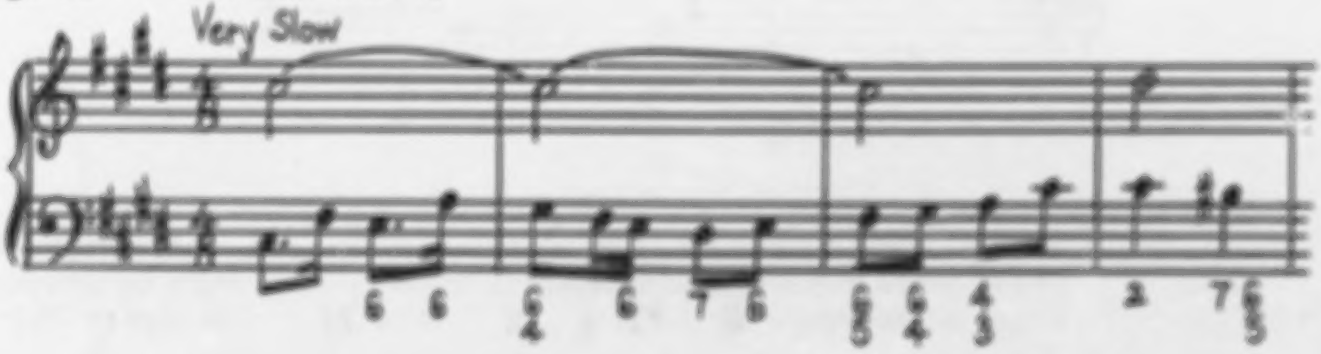
Nonharmonic tones are indicated by spacing and vertical alignment. Note in the following example that a line or dash indicates that a chord is continued even though the bass note changes. The cross (+) in the upper part indicates a nonharmonic tone in the soprano; this is not shown in the figured bass.

(TH, page 69 - measures 11 and 12)[1]



The second note in the second measure of the following example would be an accented passing tone (or an appoggiatura). The last note in measure three has no figure.

(TH, page 68 - measures 4 to 7)[1]



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[1] Paul Hindemith. Traditional Harmony, Book I (c) 1943, 1944 by B. Schott's Soehne, Mainz. Used by permission of Associated Music Publishers, Inc., New York.

HINDEMITH (TH)

B. Chord symbols

1. Key indication

Capital letters indicate a major key or major triad; small letters indicate a minor key or minor triad. For example:

(TH, page 2 - Ex. 1)[1]

Play at the keyboard the following chords:

A, a, C♯, d♭, B♭, b, G♭, f♯

(TH, page 5 - Ex. 4)[1]

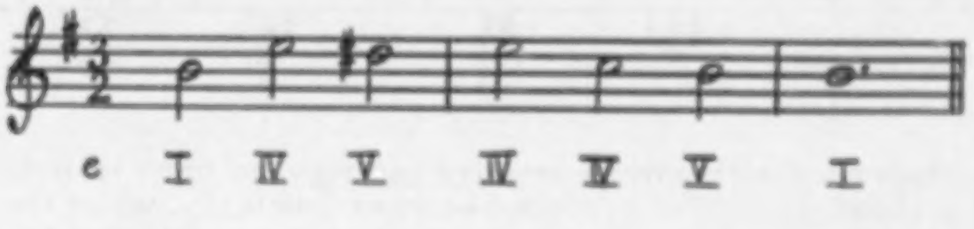
Write the following progressions:

A	I - V	e	I - V
F	V - I	f♯	V - I
B	I - IV	c	I - IV
E♭	IV - I	g	IV - I

2. The Roman numeral chord symbol (triads)

In the first ten chapters of the book, which deal with diatonic harmony, the large Roman numeral indicates triads and seventh chords.

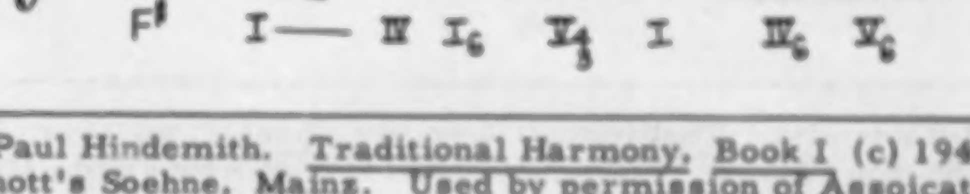
(TH, page 10 - Ex. 14, line 5)[1]



3. Inversions

These are indicated by placing the figured bass Arabic numerals to the lower right of the Roman numeral.

(TH, page 31 - line 5)[1]



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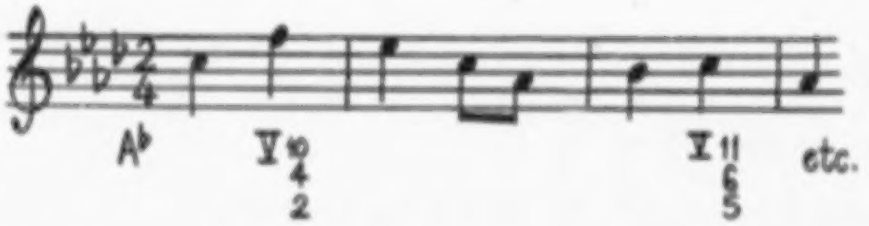
[1] Paul Hindemith. Traditional Harmony, Book I (c) 1943, 1944 by B. Schott's Soehne, Mainz. Used by permission of Assoicated Music Publishers, Inc., New York.

4. Seventh (ninth, etc.) chords

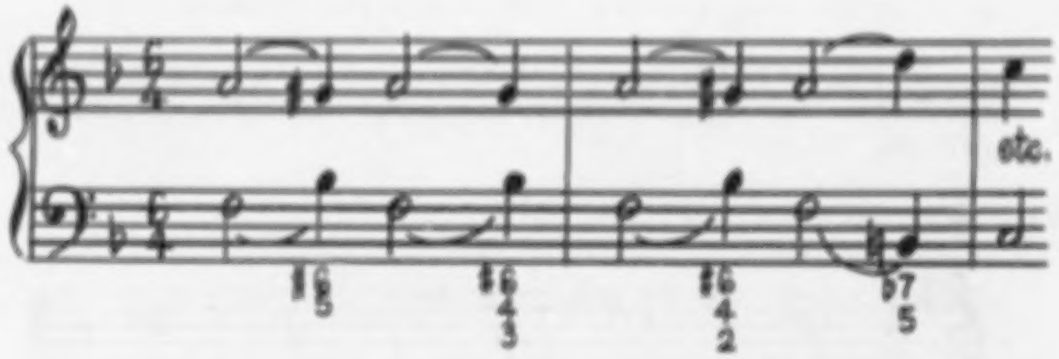
(TH, page 37 - Ex. 38)[1]



5. Altered tones

Simple alterations such as those that are made from different forms of the minor scale and the secondary dominants are explained. However, Hindemith does not attempt to show the alteration as a part of the Roman numeral symbol. He says, rather than risk confusion of of the altered chord with the unaltered chord denoted by the Roman numeral, that from this point on in the book only the more exact system of figured bass will be used. (See page 74 - par. 5)[1]

(TH, page 91 - Ex. 58)[1]



When extended alterations require the figured bass to indicate three tones of a chord even this system becomes unwieldy; when the figures or accidentals represent four tones of a chord then Hindemith believes the figures defeat their original purpose by becoming more complicated than staff-notation. (See page 94)[1]

6. Modulation

Modulation is explained on the common chord principle. In closely related keys the common chord may function as a diatonic chord; in more distant modulations it will function as an altered chord in one or both keys. This is symbolized:

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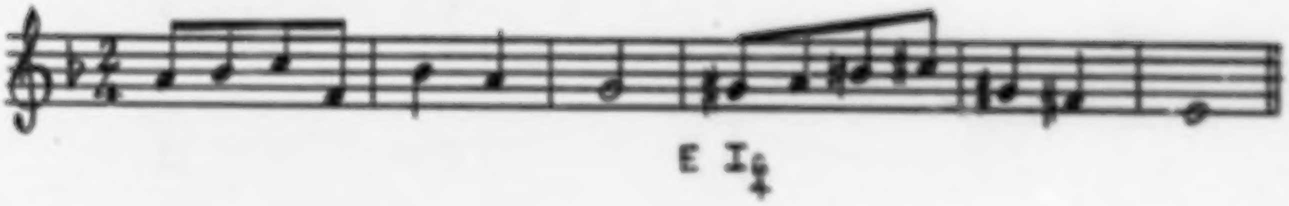
[1] Paul Hindemith. Traditional Harmony, Book I (c) 1943, 1944 by B. Schott's Soehne, Mainz. Used by permission of Associated Music Publishers, Inc., New York.

HINDEMITH (TH)

(TH, page 108)[1]



C. Nonharmonic tones

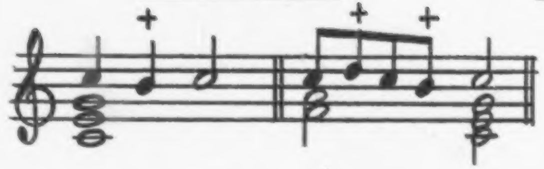
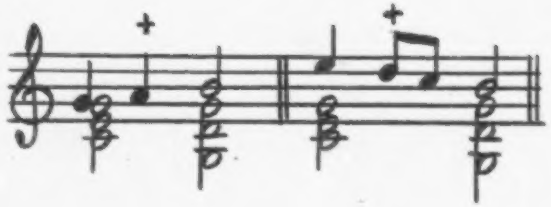
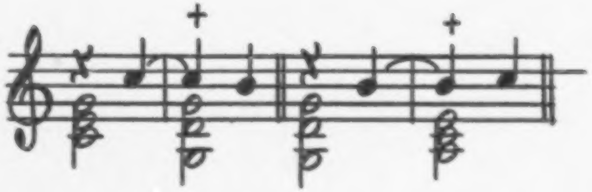
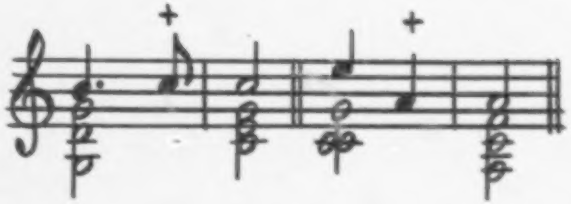
These are called non-chord tones and are defined in a somewhat different way than in most texts by American authors. Notice that the term appoggiatura is not used, and that neighboring tones are different from the usual concept of auxiliary tones. While Hindemith defines a passing tone as occurring in a weaker metric position, his examples include what might be called an accented passing tone which occurs on the strong half of a weak beat.

---

[1] Paul Hindemith. Traditional Harmony, Book I (c) 1943, 1944 by B. Schott's Soehne, Mainz. Used by permission of Associated Music Publishers, Inc., New York.

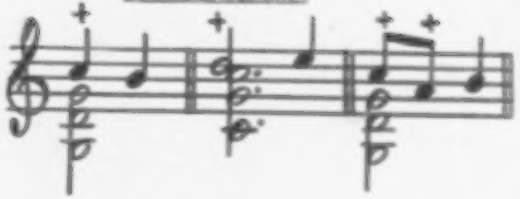
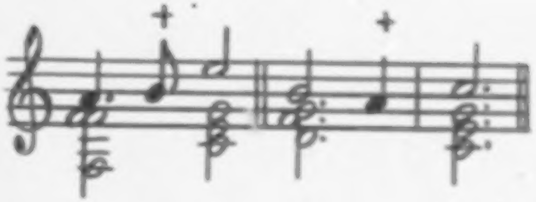
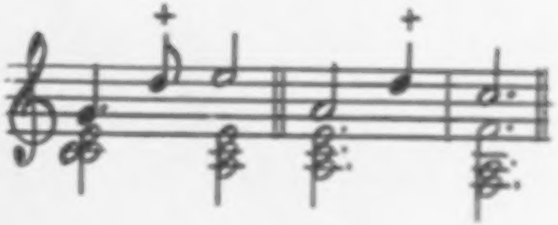
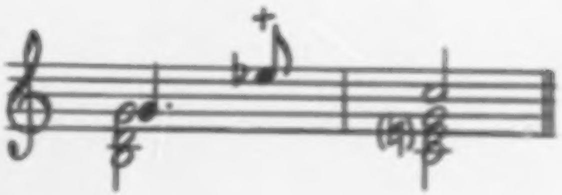
HINDEMITH (TH)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Changing tones (weak)	There are no abbreviations used for any of the non-chord tones. In the musical examples all non-chord tones, regardless of type, are marked by the cross (+).		By step	By step	Opposite to approach
Passing tones (weak or strong)			By step	By step	Same as approach
Suspension (strong)			Same note	By step	Up or down
Anticipation (weak)			By step or by skip	Same note	Same note

HINDEMITH (TH)

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Neighboring tone (strong)	There are no abbreviations used for any of the non-chord tones. In the musical examples all non-chord tones, regardless of type, are marked by the cross (+).		Initial tone or by skip	By step	Up or down
Neighboring tone Left by skip (weak)			By step	By skip	Same as or opposite to approach
Neighboring tone Approached by skip (weak)			By skip	By step	Same as or opposite to approach
Free tone (weak)			By skip	By skip	Opposite to approach

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JONES (MC)

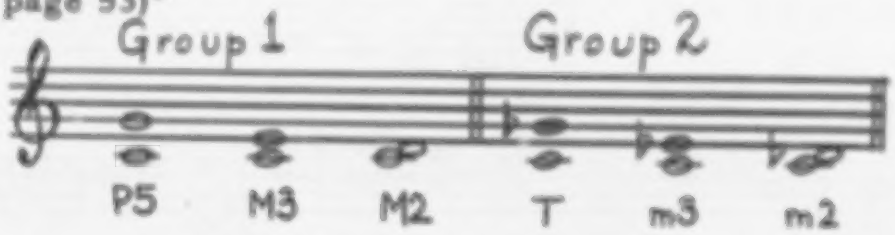
Special Area Book

This book is designed to aid in training the young composer who has already completed the usual theory, harmony and counterpoint courses. For this reason, there is very little use made of the kind of symbolization with which the present study is concerned. Generally a musical concept is presented in staff notation or described in words; there is, however, one example (page 61)[1] which shows an analysis of functional harmony in relation to a key. That example uses large Roman numerals for all chord types combined with Arabic numerals to show inversions; there are no altered chords in the example. In another example Roman numerals are used to describe cadences.

There is one type of symbolization which is peculiar to this book only; it is used by the author in discussing the intervallic content of scales, chords or sonorities.[2]

In order to categorize complex sonorities the six basic intervals are isolated and arranged in two groups:

(MC, page 53)[1]



The symbols used for these intervals are self-evident; P means perfect, T stands for the tritone, a large M means major, a small m means minor, and the numerals indicate interval size. The author assigns a different "aesthetic" meaning to the two groups of intervals, the first group is composed of "strong diatonic" intervals, the second group is made up of "altered" or "darker" intervals.

"The sounds in Group 1 are emphasized in all conventionally-tonal music, whether based on the modes or on the major scale; these are also the fundamental sounds emphasized by the overtone series. Music which departs from conventional tonality emphasizes the sounds of Group 2."[1]

The intervals contained in a scale, chord or sonority are counted and tabulated, either in staff notation or in numbers as illustrated below.

---

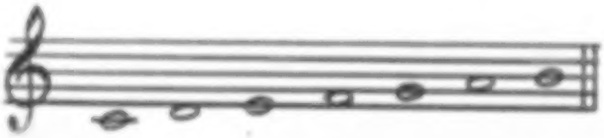
[1] George Thaddeus Jones, Music Composition (Evanston, Illinois: Summy-Birchard Co., 1963). Used by permission.

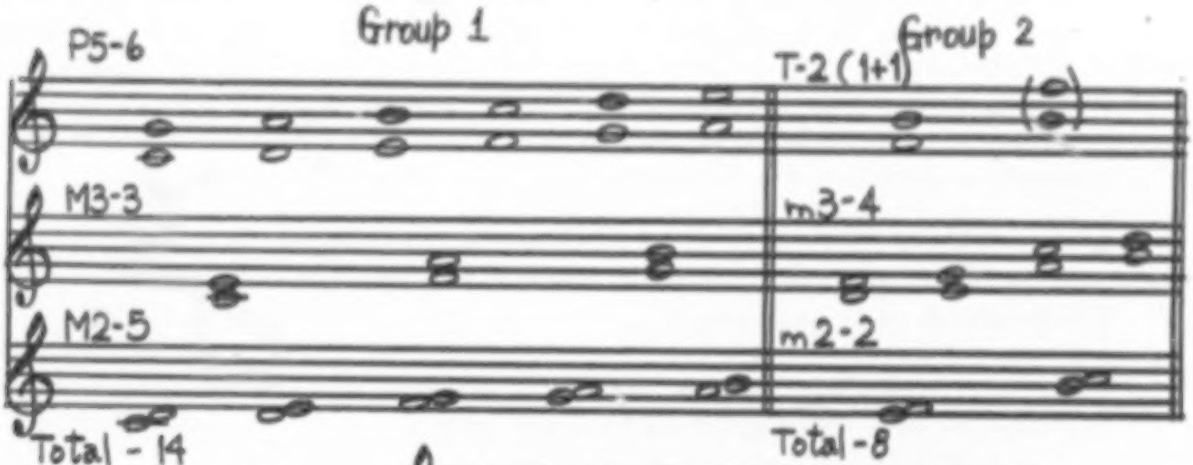
[2] For a much more detailed discussion of the intervallic content of sonorities--and an entirely different symbolization--see Harmonic Materials of Modern Music by Howard Hanson.

JONES (MC) SAB

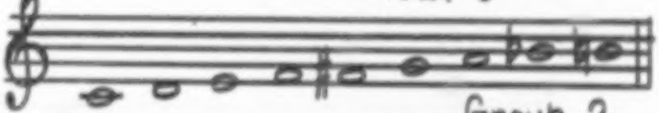
Because of its peculiar invertibility, the tritone is counted twice. As an example, the intervallic content of two different scales can be determined and arranged by groups for comparison.

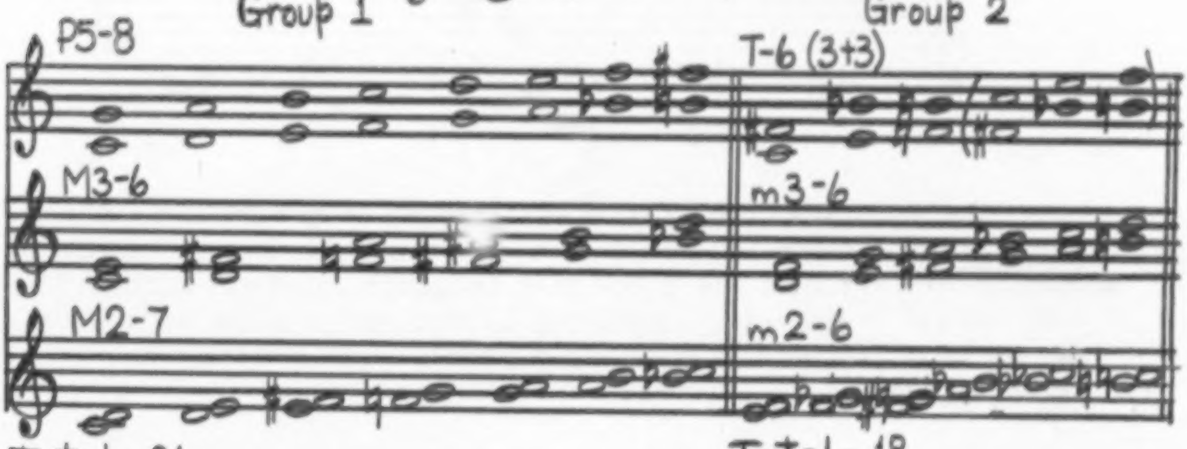
Seven-tone scale




Group 1
Group 2
P5-6
T-2 (1+1)
M3-3
m3-4
M2-5
m2-2
Total - 14
Total - 8

Nine-tone scale




Group 1
Group 2
P5-8
T-6 (3+3)
M3-6
m3-6
M2-7
m2-6
Total - 21
Total - 18

To conserve space the intervallic content is often shown without the notes; the above two scales would be:

Seven-tone scale:

Group 1	Group 2
P 5-6	T-2 (1 + 1)
M3-3	m3-4
M2-5	m2-2
Total: 14 (64%)	Total: 8 (36%)

JONES (MC) SAB

Nine-tone scale:

Group 1	Group 2
P5-8	T-6 (3 + 3)
M3-6	m3-6
M2-7	m2-6
Total: 21 (54%)	Total: 18 (46%)

The comparison of these two scales shows that 64 per cent of the intervals in the seven-tone scale were Group 1 intervals, and 36 per cent belonged to Group 2, while the nine-tone scale shows 10 per cent fewer Group 1 intervals and 10 per cent more of those belonging to Group 2. The purpose of this kind of analytic speculation is to foresee the general character which the use of a particular scale would impart to a composition.

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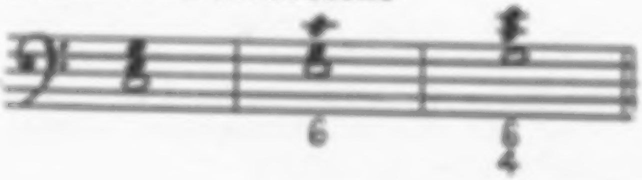
KOHS (MT)

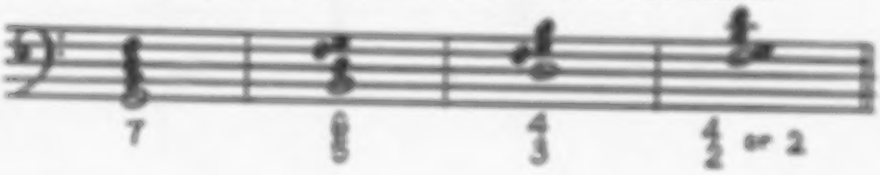
A. Figured bass

The conventional use of figures to indicate parts sounding in close position above the bass note is explained, although no exercises are given in solving figured basses. The figures are used only in connection with the chord symbol to indicate inversions. There is an Appendix A at the end of Volume I which shows in detail all of the figures and signs which are generally found.

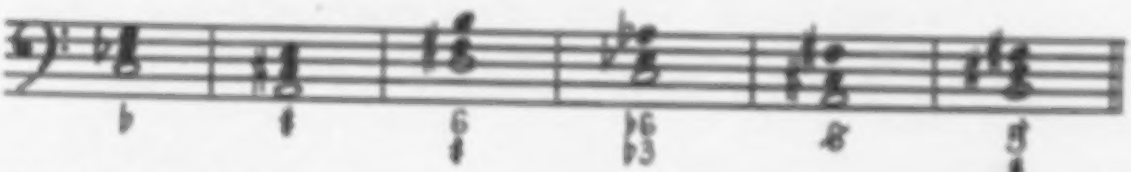
1. Triads and inversions



2. Seventh (ninth, etc.) chords and inversions

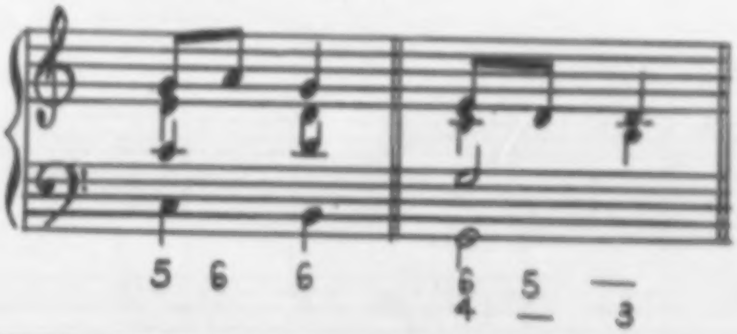


3. Altered tones
   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals precede the figures affected.
   c. The slanting stroke (6̸) and the short vertical bar (4) indicate that a tone is raised a chromatic half-step.



4. Nonharmonic tones
   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. A dash indicates that a tone is held or repeated.

(MT, page 118, (e) and (g))[1]



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[1] Ellis B. Kohs, Music Theory, Vol. I (New York: Oxford University Press, 1961). Used by permission.

B. Chord symbols

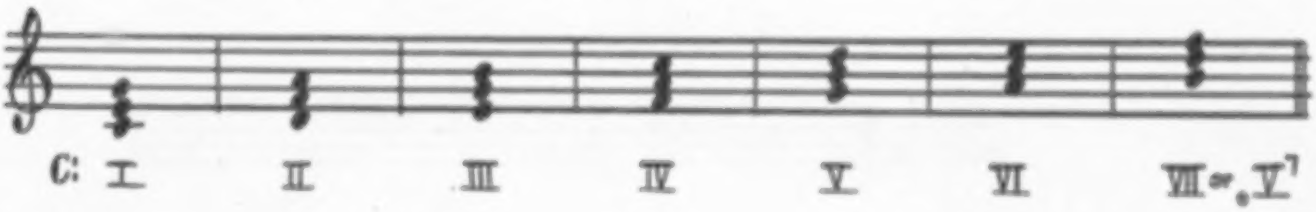
1. Key indication

a. A capital letter followed by a colon indicates a major key.
C: B♭: F♯:

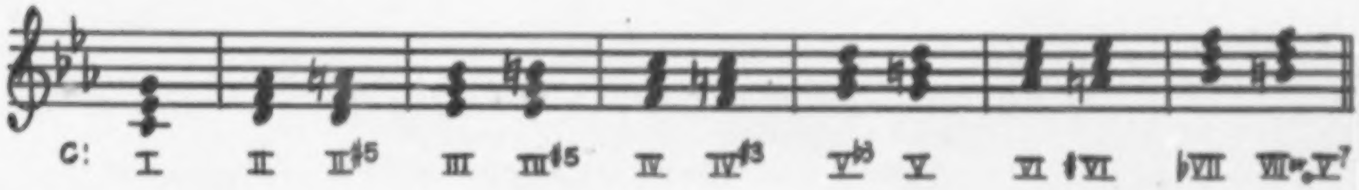
b. A small letter followed by a colon indicates a minor key.
c: b♭: f♯:

2. The Roman numeral chord symbol (triads)

a. In the major key the large Roman numeral is used to indicate all chords. The leading-tone triad is given as both VII and oV^7 ("incomplete dominant seventh").

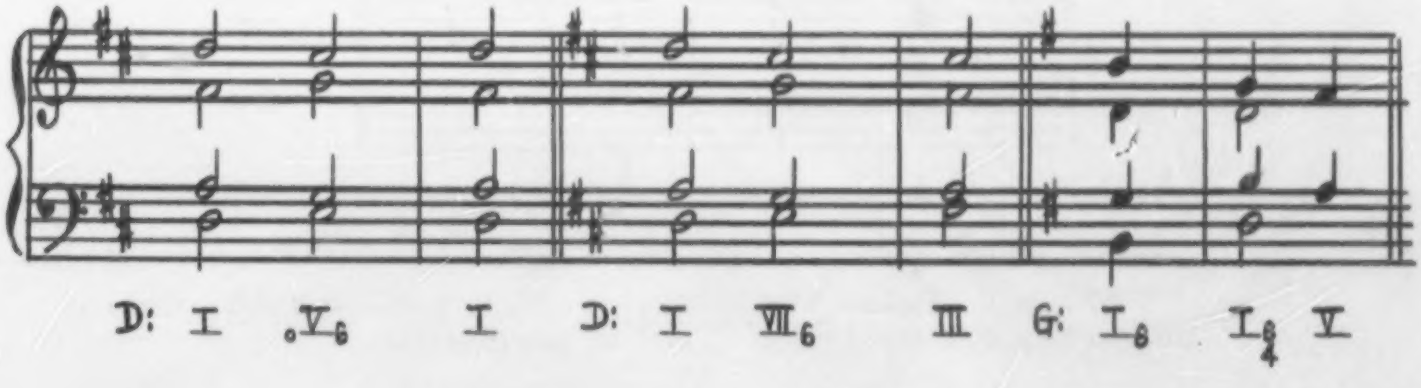


b. In the minor key the large Roman numerals without alteration are used to indicate the most frequent forms of the chords. Less frequent forms (made from notes in the various types of the minor scale) are shown with an alteration. The altered note is expressed in relation to the chord root; sharp (♯) means raised and flat (♭) means lowered, regardless of the actual accidental needed for a particular key. Note: the major dominant triad is symbolized V, while the minor dominant triad is symbolized V$^{\flat 3}$.



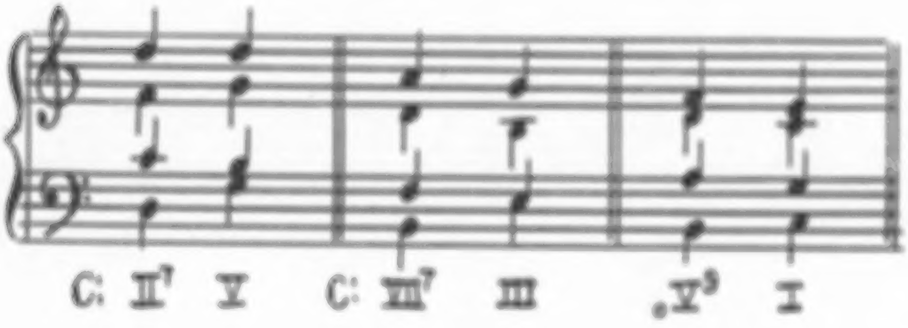
3. Inversions

The Arabic figures are placed to the lower right of the Roman numeral to indicate inversion.

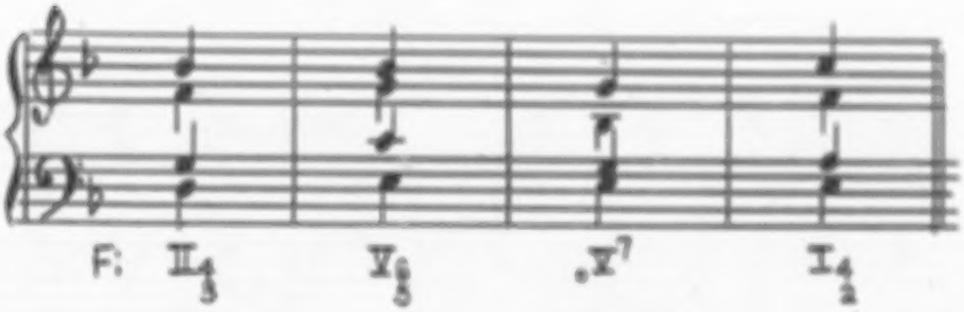


4. Seventh (ninth, etc.) chords

The numerals 7, 9, etc. are placed to the upper right of the Roman numeral when the chord is in root position.



When the seventh chords are found in inversion the Arabic numerals are placed to the lower right.

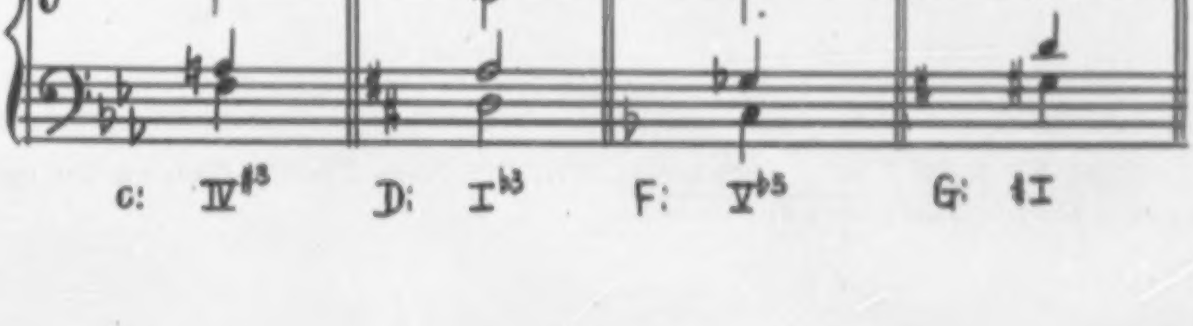


5. Altered tones

a. The altered tone is expressed as the third (3) or fifth (5) of the chord. This is placed to the upper right of the Roman numeral.

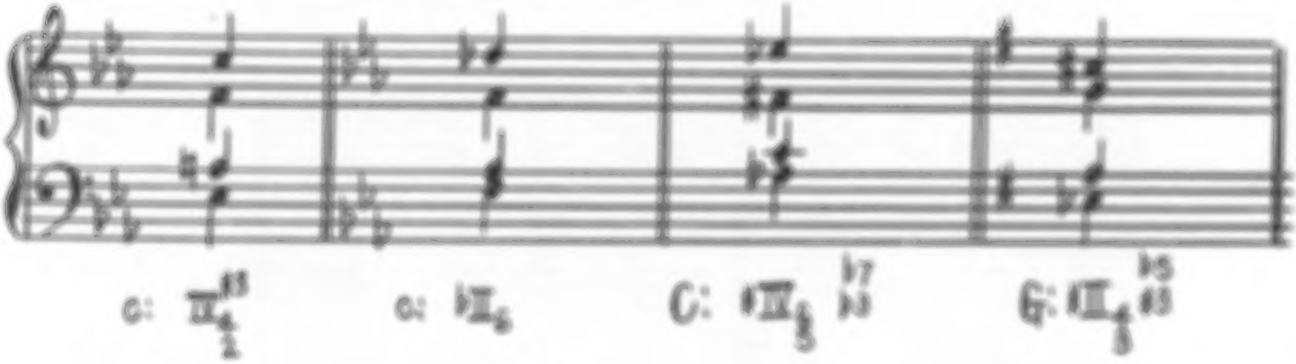
b. A sharp (♯) before the figure means raised; a flat (♭) before the figure means lowered, regardless of the actual key.

c. If the root is altered the sharp or flat is placed before the Roman numeral.



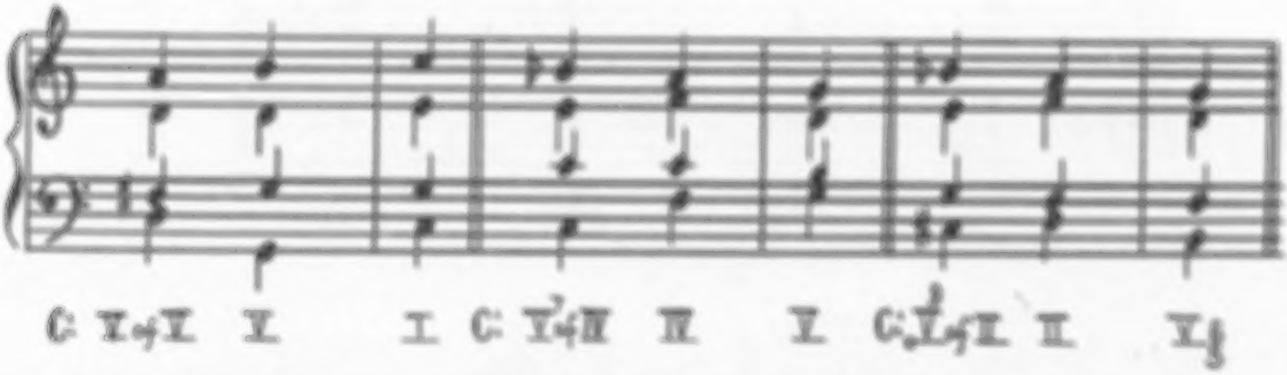
KOHS (MT)

If the altered chord is inverted both the alteration (to the upper right) and the inversion (to the lower right) are shown. Note: The alteration is not shown in the inversion numerals.



The Neapolitan sixth chord (number two in the above example) is also symbolized N6. The augmented sixth chords (numbers three and four above) are also symbolized A6.

The secondary dominant is written as follows:



In a letter to the author Mr. Kohs states that the next edition of this text will include the following additional symbols (which could be looked upon as an expansion of the list found on pp. 68 and 92 of MT. Vol. II):[1]

[illegible] = Augmented triad
[illegible] = Augmented triad, first inversion
[illegible] = Augmented triad, second inversion
[illegible] = Diminished triad
[illegible] = Diminished triad, first inversion
[illegible] = Diminished triad, second inversion

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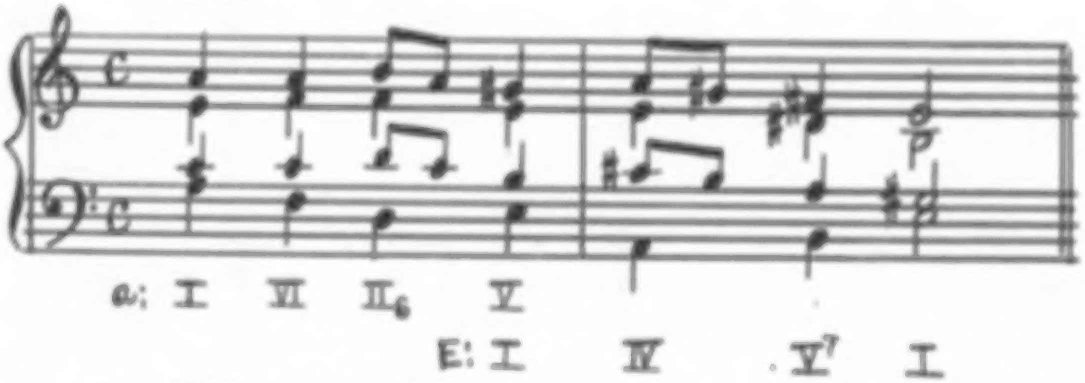
[1] Ellis B. Kohs, Music Theory, Vol. I (New York: Oxford University Press, 1961). Used by permission.

6. Modulation

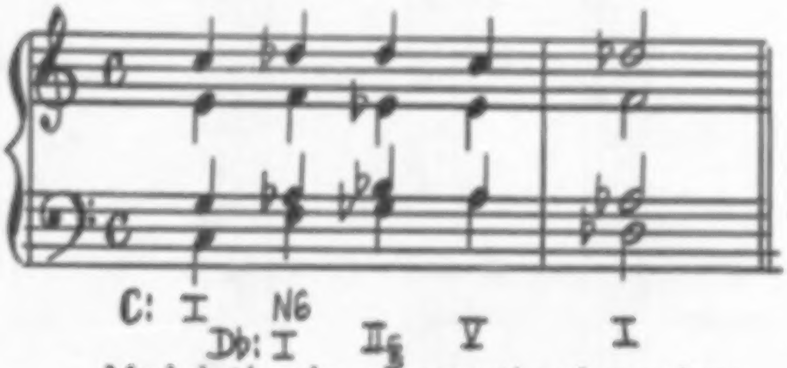
Modulation is explained as the idea that one tonic may be abandoned in favor of another. There is some discussion as to how any tonic is established and how the modulatory process unfolds. The first concept explained in detail is that of the diatonic common chord or pivot chord. This is symbolized:

(MT, Vol. II, page 5)[1]



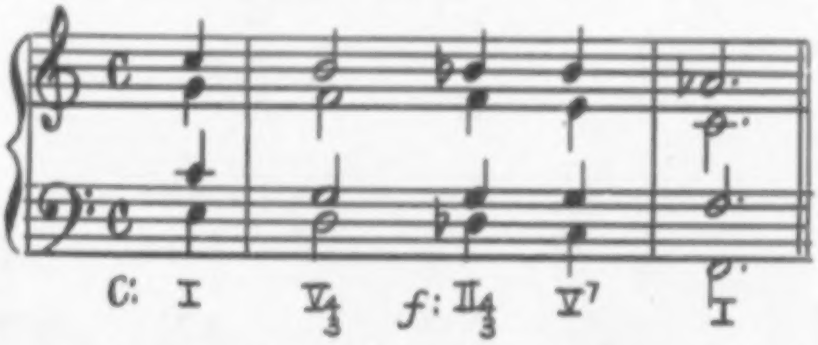
In addition to the diatonic common chord this principle may be extended to include an altered chord as a common chord.

(MT, Vol. II, page 59 (b))[1]



Modulation by chromatic alteration:

(MT, Vol. II, page 59 (d))[1]



Other examples show enharmonic modulation, a modulating sequence and a modulation by one tone but these examples require no new symbolization.

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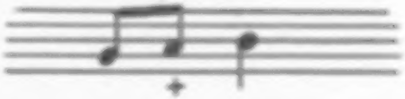
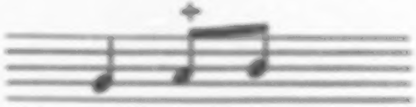
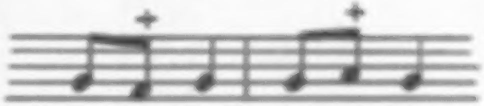
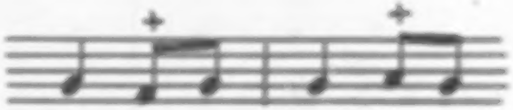
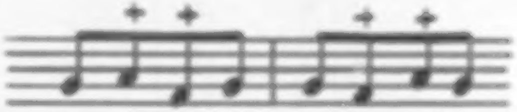
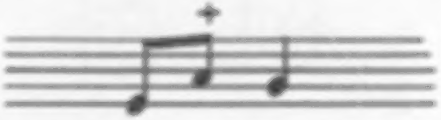
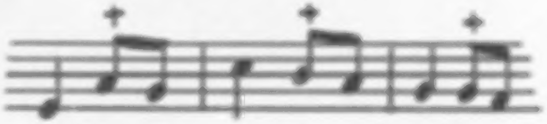
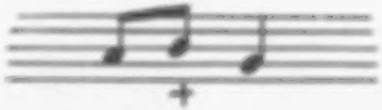
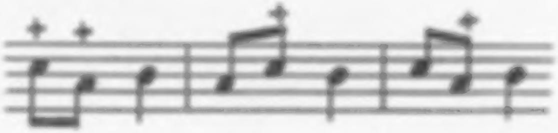
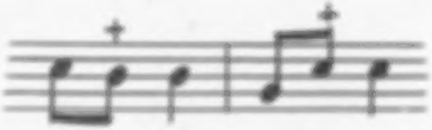
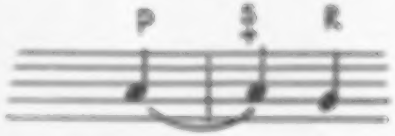
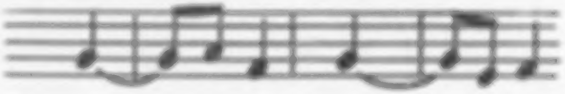
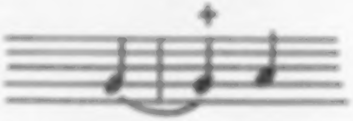
[1] Ellis B. Kohs, Music Theory, Vol. II (New York: Oxford University Press, 1961). Used by permission.

KOHS (MT)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing tone (Unaccented)	P. T.		By step	By step	Same as approach
Accented Passing tone	A. P. T.		By step	By step	Same as approach
Neighboring tone (Unaccented)	N. T.		By step	By step	Opposite to approach
Accented Neighboring tone	A. N. T.		By step	By step	Opposite to approach
Double Neighboring tone (Unaccented)	D. N. T.		step - skip - step		
Unprepared Neighboring tone (Unaccented)	U. N. T.		By skip	By step	Opposite to approach
Appoggiatura (Accented)	App.		By skip By step By repeated tone	By step	

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Echappée (Escaped tone) (Unaccented)	Ech.		By step	By skip	Opposite to approach
Changing note Group (Nota Cambiata)	C. N. G.		skip - step		Opposite to approach
Anticipation (Unaccented)	Ant.		By step By skip	Repeated tone	Same tone
Suspension (Accented)	P S R		Tied note	By step	Down
Decorated Resolution of suspension	D. R.		By step By skip	By step By skip	Opposite to approach
Retardation (Accented)	Ret.		Tied note	By step	Up
Pedal Point	(none given)		Held tone		

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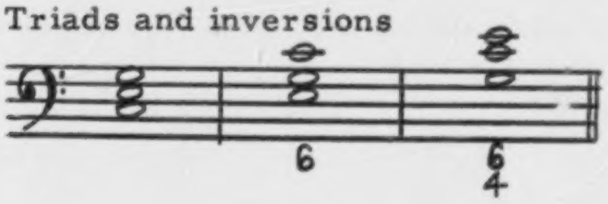
LAYCOCK & NORDGREN (FYMT)

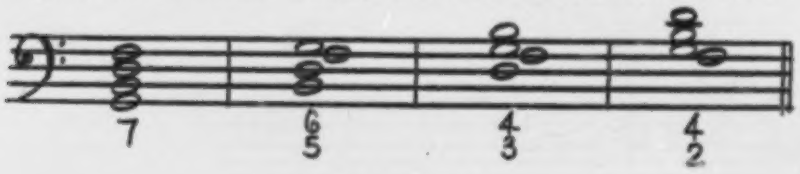
A. Figured bass

Arabic numerals are placed below the bass part.

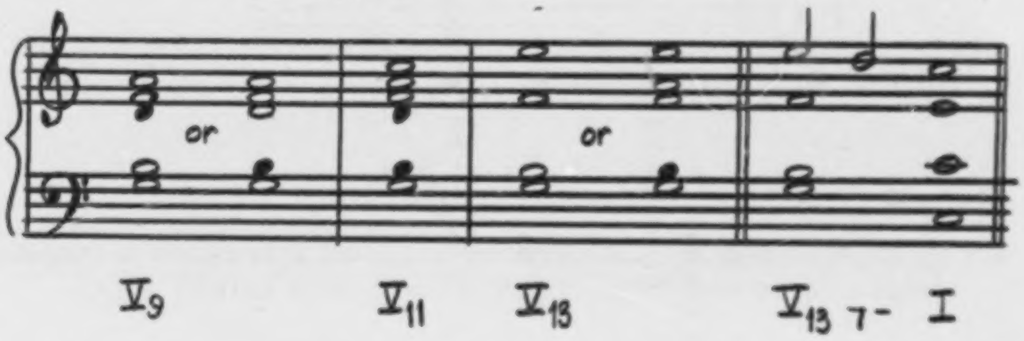
1. Triads and inversions



2. Seventh (ninth, etc.) chords and inversions



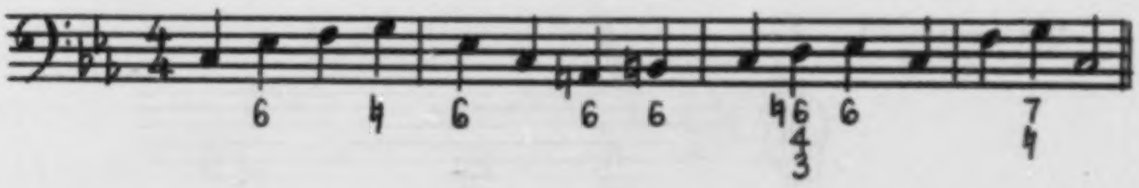
(FYMT, page 121 - Fig. 205)[1]



3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals precede the figures affected.
   c. The slanting stroke (6̸) is not used.

(FYMT, page 66 - Ex. 113)[1]



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[1] Harold R. Laycock & Quentin R. Nordgren, First Year Music Theory (New York: Appleton-Century-Crofts, Inc., 1962). Used by permission.

LAYCOCK & NORDGREN (FYMT)

4. Nonharmonic tones

There are very few figured basses (as distinct from exercises which use both chord symbol and Arabic figures) given for student solution. No examples of nonharmonic tones indicated in the figured bass were observed.

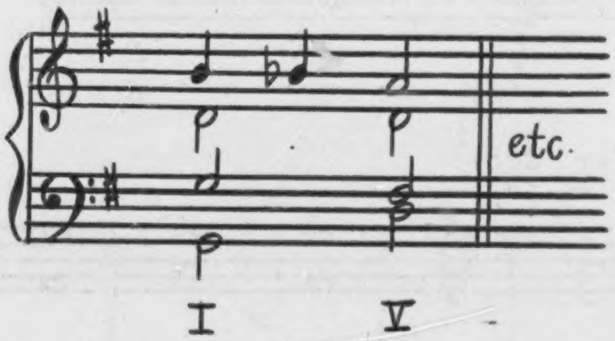
B. Chord symbols

1. Key indication

Three different situations occur in the text:

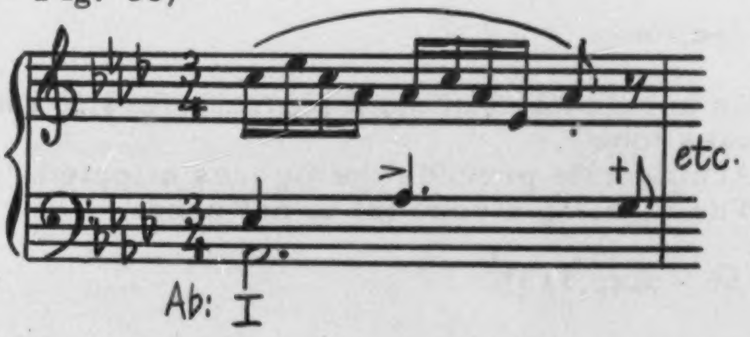
a. No indication of the key is given before the Roman numerals.

(FYMT, page 68 - Fig. 119)[1]

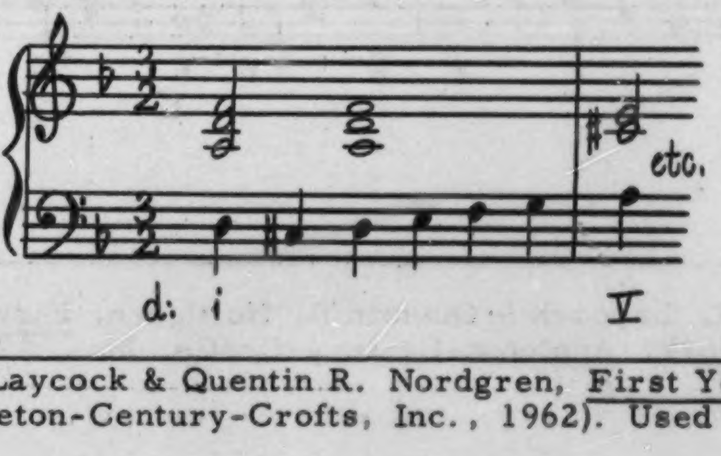


b. A capital letter followed by a colon indicates a major key, a small letter followed by a colon indicates a minor key.

(FYMT, page 25 - Fig. 58)[1]



(FYMT, page 67 - Fig. 117)[1]



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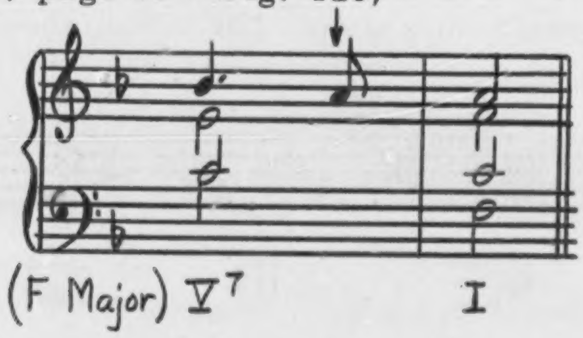
[1] Harold R. Laycock & Quentin R. Nordgren, First Year Music Theory (New York: Appleton-Century-Crofts, Inc., 1962). Used by permission.

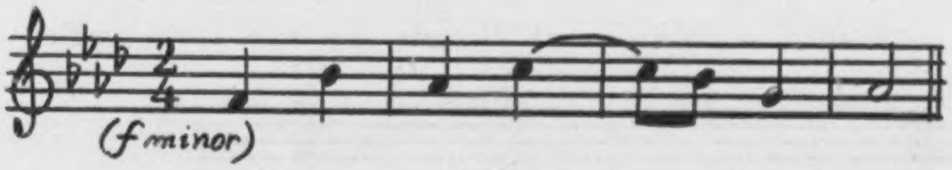
LAYCOCK & NORDGREN (FYMT)

c. The key is written out as below:

(FYMT, page 73 - Fig. 128)[1]



(FYMT, page 71 - Ex. 125)[1]



Most of the examples and exercises, however, employ the large and small letters to indicate major and minor keys.

2. The Roman numeral chord symbol (triads)

The quality of each triad type shown by the Roman numeral symbol as follows:

a. A large Roman numeral indicates a major triad:
I V
b. A lower-case Roman numeral indicates a minor triad:
ii iii
c. A large Roman numeral followed by a plus sign indicates an augmented triad:
III+
d. A small Roman numeral with a circle at the upper right indicates a diminished triad:
vii°

3. Inversions

The Arabic numerals from figured bass are placed to the lower right, and to the right, of the Roman numeral to show the inversion.

ii_6 V_7 I^6_5 $III+_7$ ii^o_7

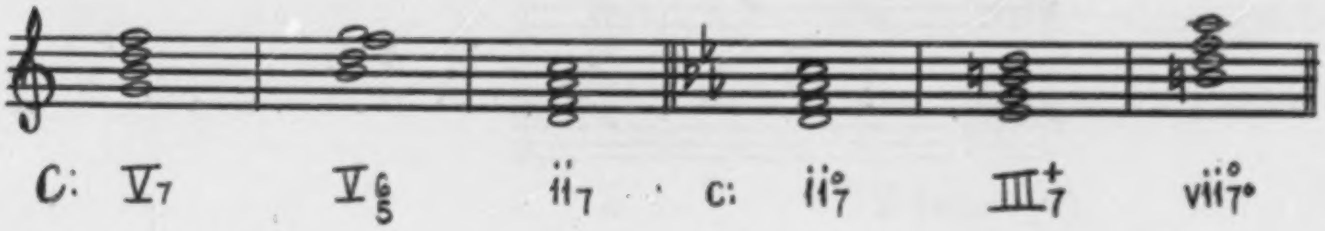
---

[1] Harold R. Laycock & Quentin R. Nordgren, First Year Music Theory (New York: Appleton-Century-Crofts, Inc., 1962). Used by permission.

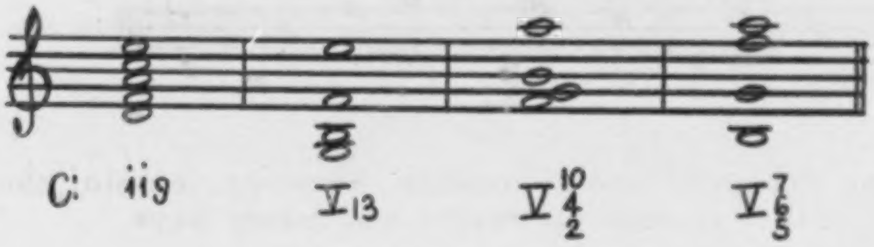
LAYCOCK & NORDGREN (FYMT)

4. Seventh (ninth, etc.) chords

The addition of a figure seven to the Roman numeral adds a diatonic seventh to the quality of the triad indicated. The diminished seventh is shown by 7°.

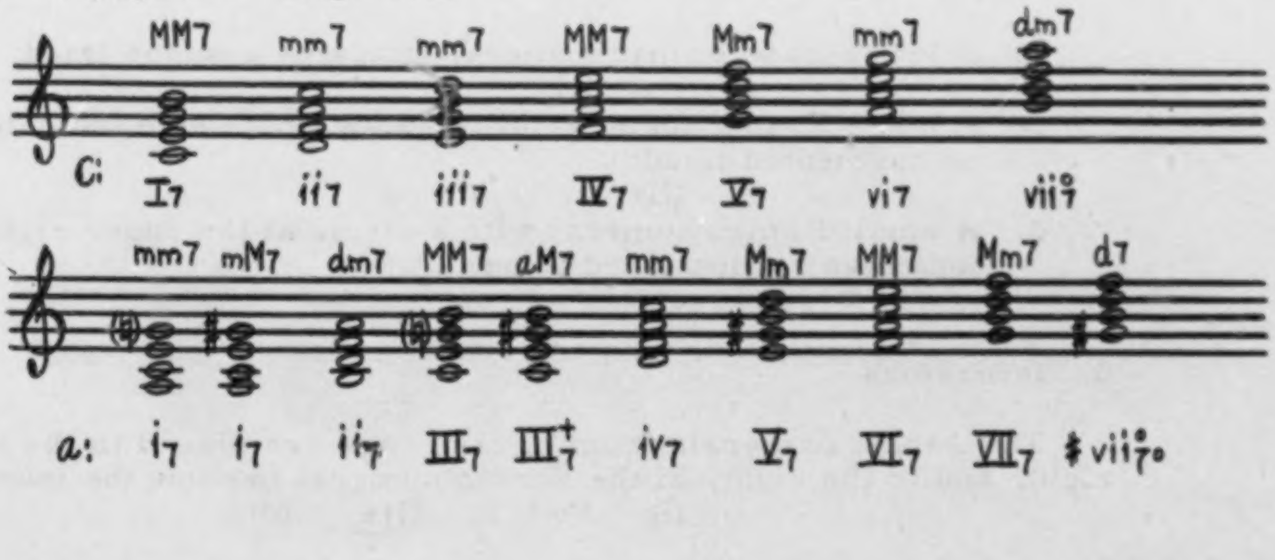

C: V7
V6/5
ii7
c: iiø7
III+7
vii°7°

Ninth, eleventh and thirteenth chords are similarly indicated.


C: ii9
V13
V 10 4 2
V 7 6 5

The structure-type of each seventh chord is also shown in this text by symbols which indicate (1) the type of triad, and (2) the type of seventh.

(FYMT, page 117 - Fig. 199)[1]


MM7
mm7
mm7
MM7
Mm7
mm7
dm7
C: I7
ii7
iii7
IV7
V7
vi7
vii°7
mm7
mM7
dm7
MM7
aM7
mm7
Mm7
MM7
Mm7
d7
a: i7
i7
ii°7
III7
III+7
iv7
V7
VI7
VII7
♯vii°7°

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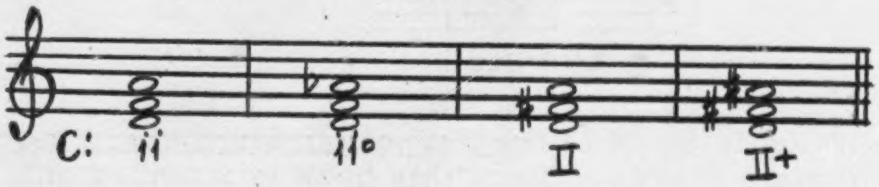
[1] Harold R. Laycock & Quentin R. Nordgren, First Year Music Theory (New York: Appleton-Century-Crofts, Inc., 1962). Used by permission.

LAYCOCK & NORDGREN (FYMT)

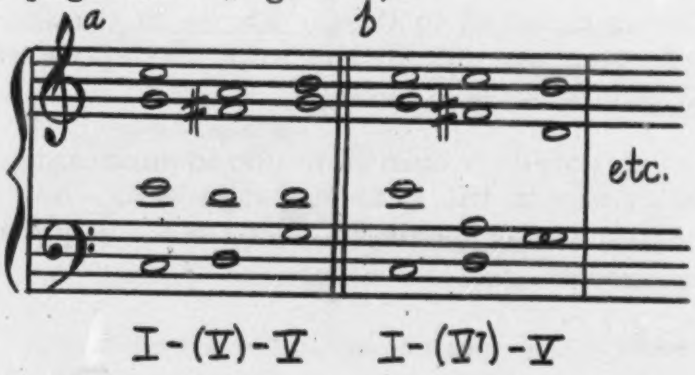
5. Altered tones

The simpler alterations made to triads are indicated by symbolizing the proper quality of the altered triad as described above.



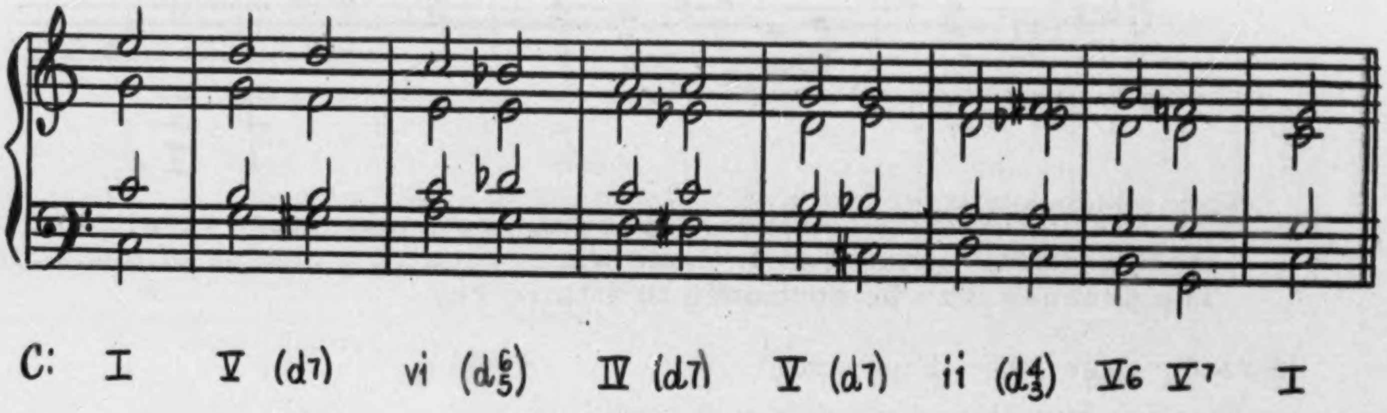
The authors make a special category out of "secondary dominants." These are symbolized in parenthesis as below:

(FYMT, page 122 - Fig. 206)[1]



The diminished seventh is similarly treated as a secondary dominant. This chord may be symbolized as $(\text{vii}^{o}7^{o})$ or by the symbol (d7), or in inversion, (d^{6}_{5}), (d^{4}_{3}), (d^{4}_{2}).

(FYMT, page 128 - Fig. 212)[1]



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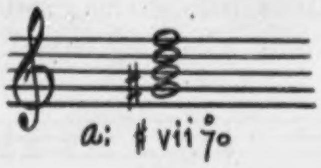
[1] Harold R. Laycock & Quentin R. Nordgren, First Year Music Theory (New York: Appleton-Century-Crofts, Inc., 1962). Used by permission.

LAYCOCK & NORDGREN (FYMT)

No other alterations are accounted for except the accidental placed before the Roman numeral to indicate the altered root of a root position chord.



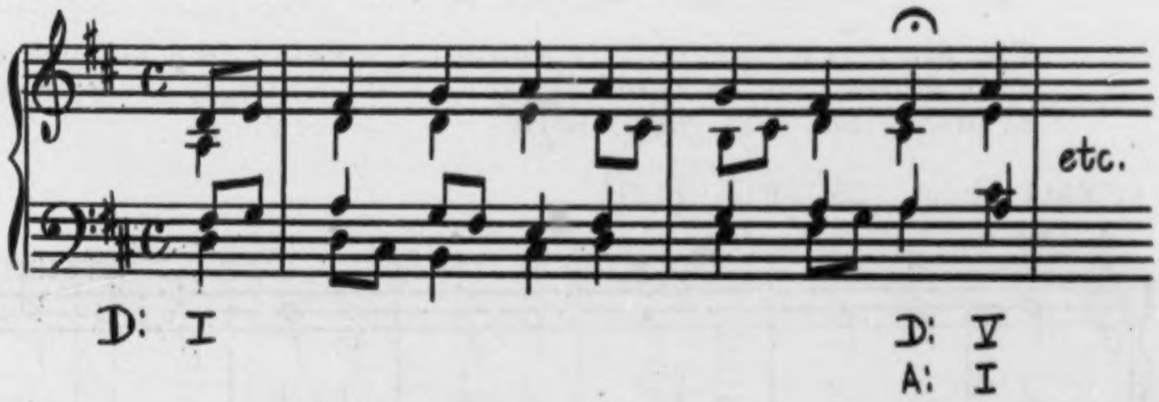
No mention is made of the Neapolitan sixth chord nor the traditional augmented sixth chords. Since this book is intended only as a first-year text, these and other chromatic chords lie beyond its scope.

6. Modulation

Modulation is treated rather extensively; four out of the thirty-two chapters in the book being devoted to this. Three of the four chapters concern modulation by common-chord; the fourth chapter explains the concept of a chromatically altered chord.

The three chapters devoted to common-chord modulation treat in detail the possible modulations to the near-related keys, however, the principle of symbolization is the same in all cases. A pivot chord is symbolized in two keys.

(FYMT, page 132 - Fig. 218)[1]



Modulation by a common-chord may also take place between keys more distantly related than those which require a change of one accidental. The process may be continued to a third key.

(FYMT, page 197 - Fig. 238)[1]

C: ——► V
D: IV ——► V
A: I ——► I

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[1] Harold R. Laycock & Quentin R. Nordgren, First Year Music Theory (New York: Appleton-Century-Crofts, Inc., 1962). Used by permission.

LAYCOCK & NORDGREN (FYMT)

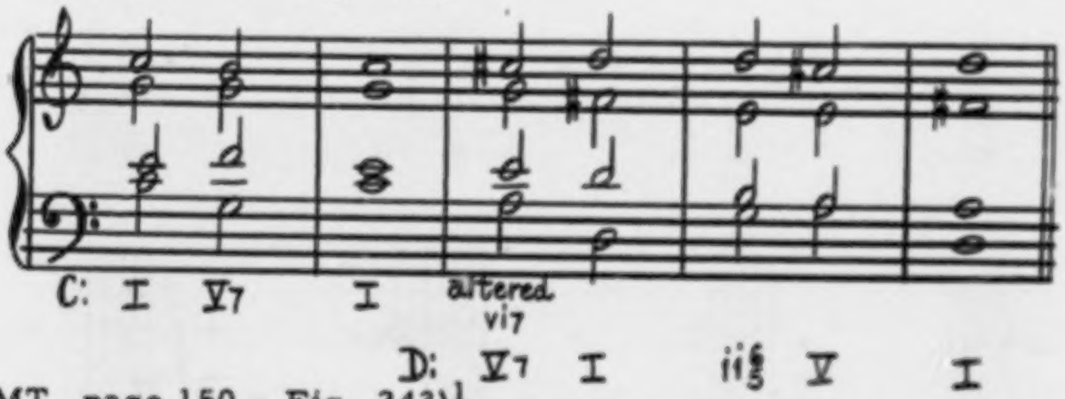
The modulation may also involve changing from a major mode to the parallel minor, or from a minor mode to the parallel major.

(FYMT, page 147 - Fig. 239)[1]

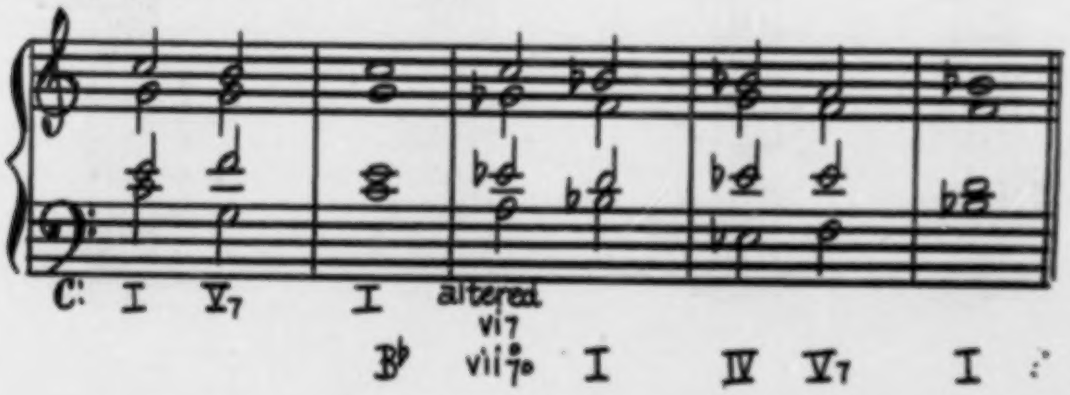
C: I ⟶ vi
a: i ⟶ A: V ⟶ I

Finally, the pivot chord may be approached as a chromatically-altered chord and left as a diatonic chord. The chords most commonly used in this way are the dominant seventh chord and the diminished seventh chord on the leading tone.

(FYMT, page 148 - Fig. 240)[1]



(FYMT, page 150 - Fig. 243)[1]



Other types of chromatic or enharmonic modulation are not treated.

C. Nonharmonic tones

Nonchord tones are defined primarily on the basis of how they are approached and left and secondarily as to whether they are accented or not.

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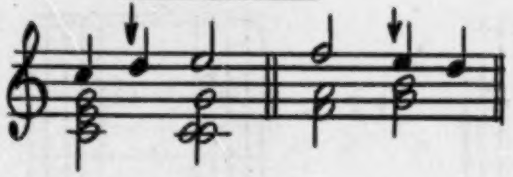
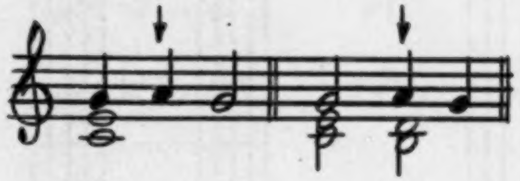
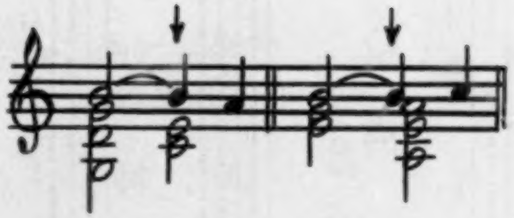
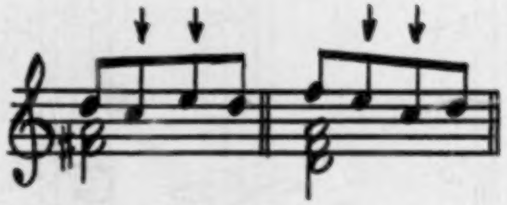
[1] Harold R. Laycock & Quentin R. Nordgren, First Year Music Theory (New York: Appleton-Century-Crofts, Inc., 1962). Used by permission.

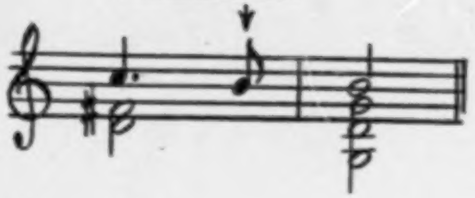
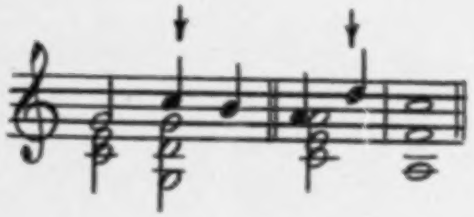
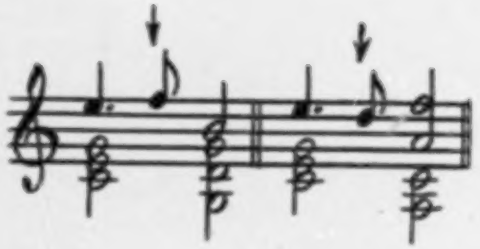
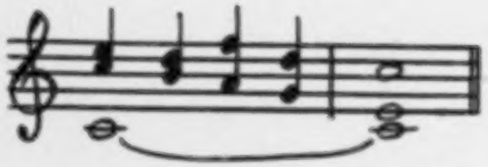
LAYCOCK & NORDGREN (FYMT)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
passing tone	None are used		By step	By step	Same as approach
auxiliary tone			By step	By step	Opposite to approach
suspension (retardation)			By same tone	By step	Up or down
changing tones (cambiata)			By step and skip	By skip and step	

LAYCOCK & NORDGREN (FYMT)

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
anticipation	None are used		By step	By repeated note	
appoggiatura			By skip	By step	
escape tone (echappée)			By step	By skip	
pedal point			Held tone		

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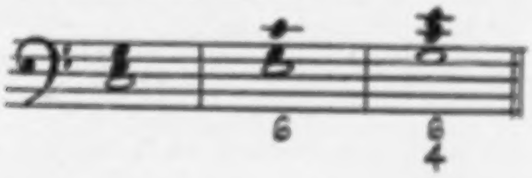
MC HOSE (CHT)

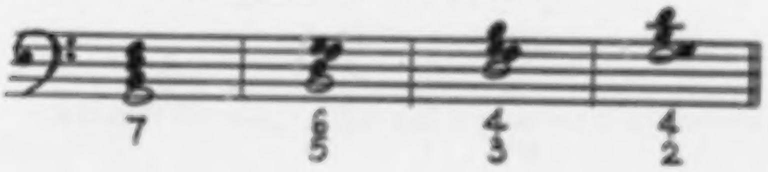
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions



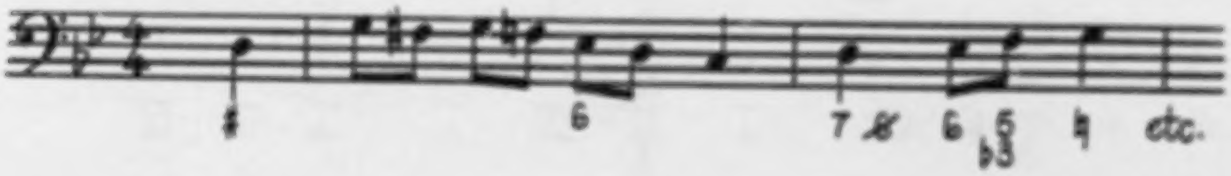
2. Seventh chords and inversions



No ninth, eleventh or thirteenth chords are shown, since McHose is concerned with eighteenth century practice only. He believes that all dissonances, other than the seventh, are better explained by nonharmonic procedures.

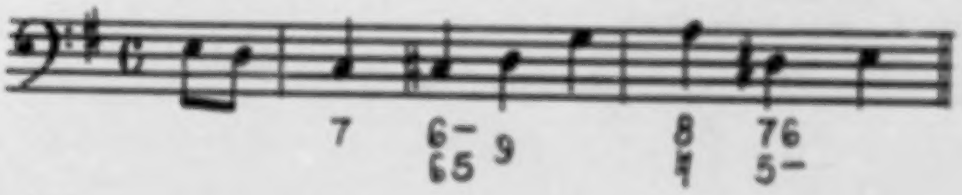
3. Altered tones

a. An accidental without a figure refers to the third above the bass tone.
b. Accidentals precede the figures affected.
c. The slanting stroke (6̸) indicates that a tone is raised a chromatic half-step.



4. Nonharmonic tones

a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
b. A dash indicates that a tone is held or repeated.



B. Chord symbols

McHose does not combine the Roman numeral with the Arabic numerals from figured bass. His chord symbol, therefore, shows not the inversion of a chord but (a) the root of the chord, (b) whether a triad or seventh chord and (c) what, if anything, is altered.

1. Key indication

a. A capital letter followed by a colon indicates a major key.
C: B♭: F♯:

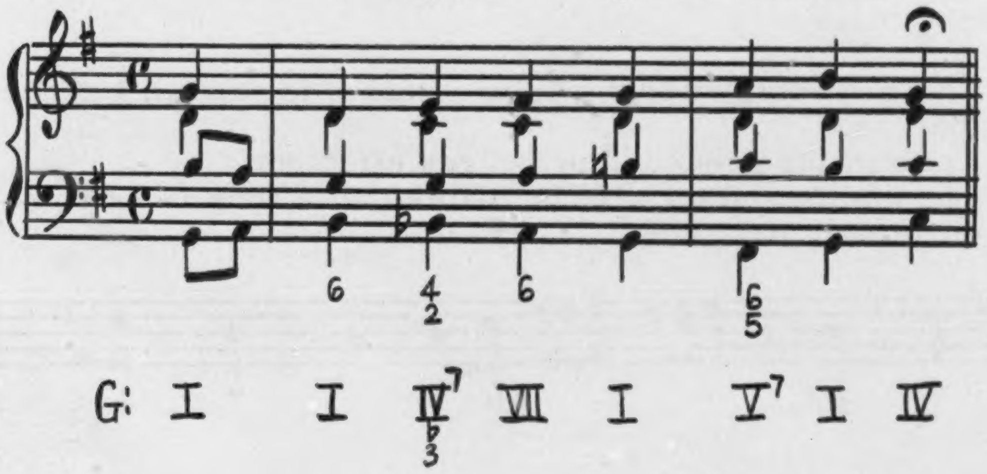
b. A small letter followed by a colon indicates a minor key.
c: b♭: f♯:

2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.
I II VII I

3. Inversions

Since the Roman numeral chord symbol does not show the chord inversion, this must be determined by looking at the figured bass. The figured bass numerals are placed directly below the bass part; the chord symbol analysis, which is kept separate, is placed below this.



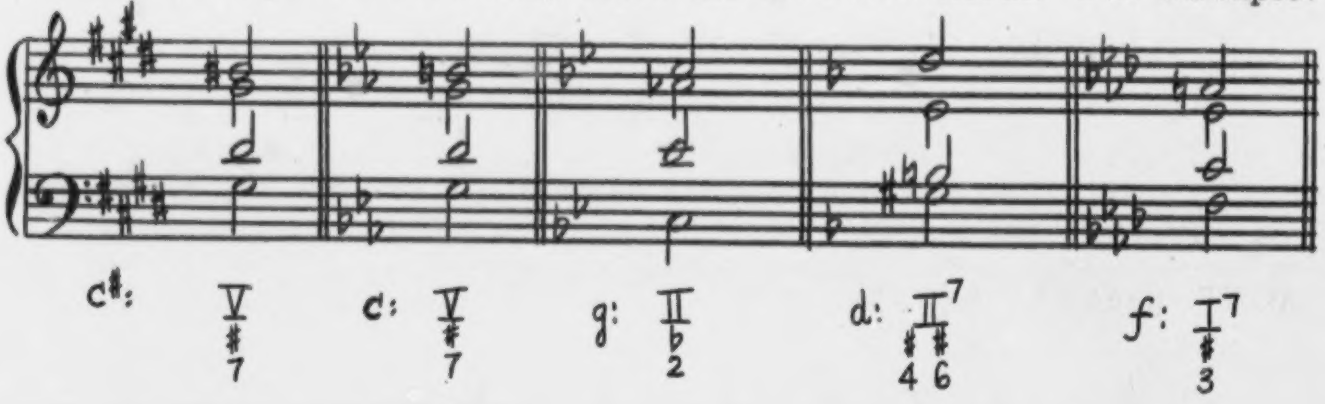
4. Seventh chords

These are indicated by the superscript 7 which is added at the upper right of the Roman numeral.

I II^7 V^7 I

5. Altered tones

Altered tones are defined in terms of scale degree rather than in relation to the chord root. In order to keep the chord symbol exactly the same, regardless of the key employed, a raised scale degree is always indicated by a sharp (♯) and a lowered scale degree is indicated by a flat (♭). Thus, in the chord symbol, ♯ = raised and ♭ = lowered, regardless of the actual accidental which may be necessary in the staff notation for that particular key. The accidental and the scale degree affected are placed vertically below the Roman numeral. For example:

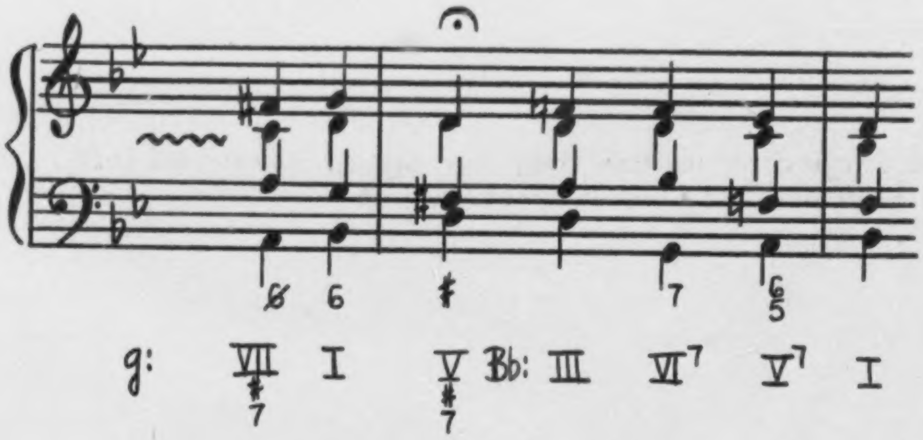


6. Modulation

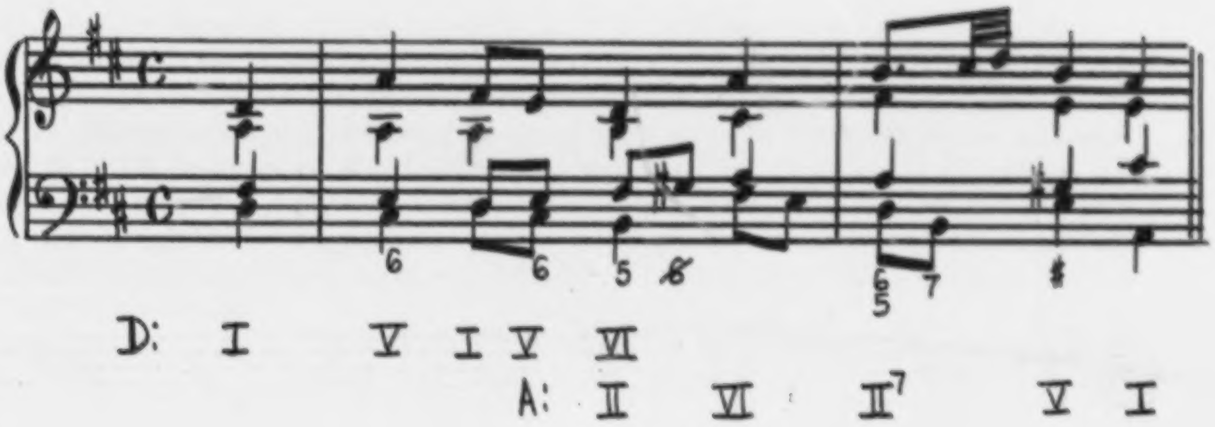
McHose distinguishes three types of modulation:

a. At the initial announcement of a phrase.
b. Within the phrase by common chord.
c. Within the phrase - chromatic.

In the first case (a.) the chord symbols for the new phrase begin directly in the new key without showing a common chord.

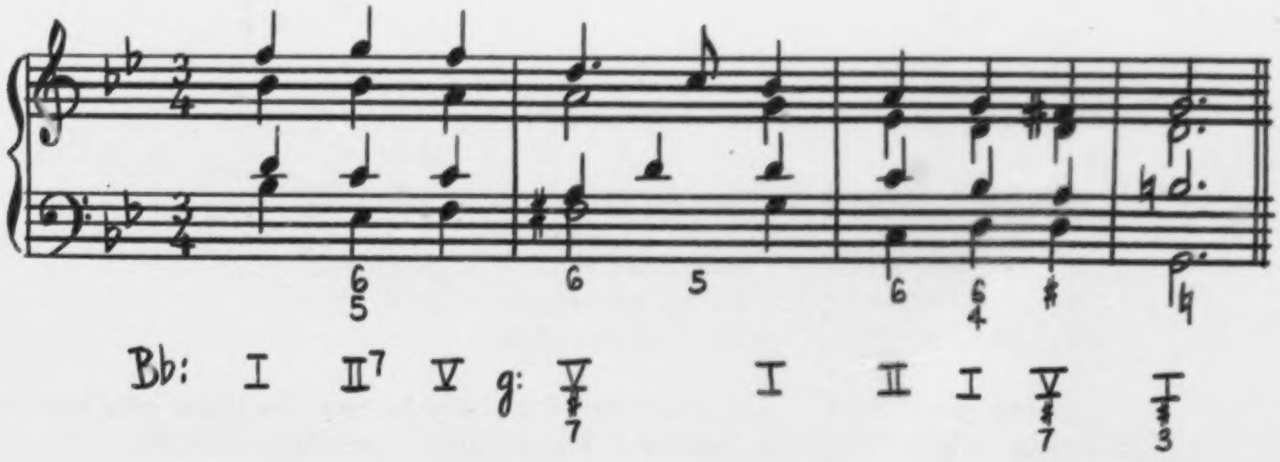


In (b.) the common chord is shown in both keys.


6 6 5 6 6/5 7 ♯
D: I V I V VI
A: II VI II7 V I

In (c.) no common chord is symbolized; the new key begins with the chromatic inflection.

(CHT, page 18 - Ex. 30)[1]


6/5 6 5 6 6/4 ♯ ♮
Bb: I II7 V g: V♯7 I II I V♯7 I♯3

C. Nonharmonic tones

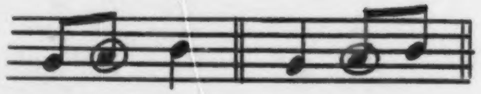
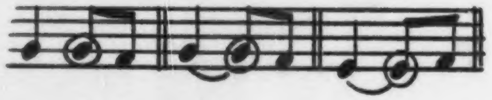
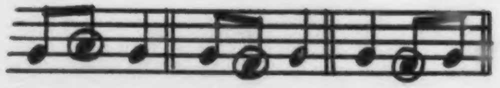
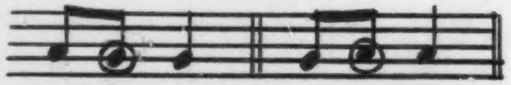
These are defined according to how they are approached and left rather than whether they are rhythmically weak or strong.

---

[1] Allen Irvine McHose, The Contrapuntal Technique of the 18th Century (New York: F. S. Crofts & Co., 1947). Used by permission.

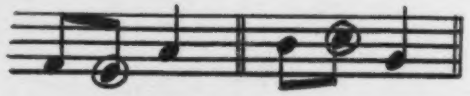
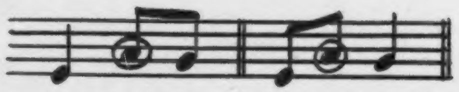
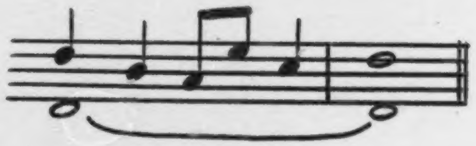
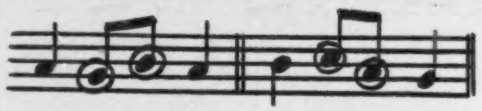
MC HOSE (CHT)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing tone	None are used		By step	By step	Same as approach
Suspension (retardation)			Same note	By step	Down or up
Neighboring tone			By step	By step	Opposite to approach
Anticipation			By step	Same note	Same note

MC HOSE (CHT)

C. Nonharmonic tones (cont.)

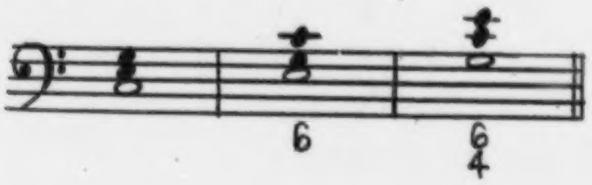
Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Escape tone	None are used		By step	By skip	Opposite to approach
Appoggiatura			By skip	By step	Opposite to skip
Pedal Point			Sustained tone		
Changing tones			By step-skip-step		

MC KINLEY (HR)

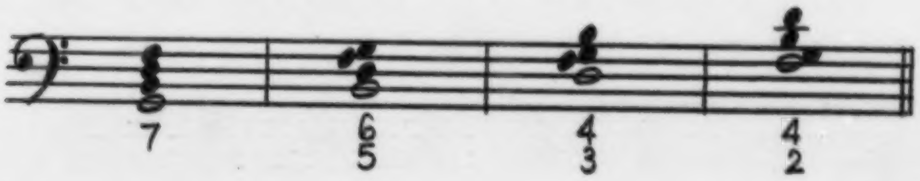
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions



2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

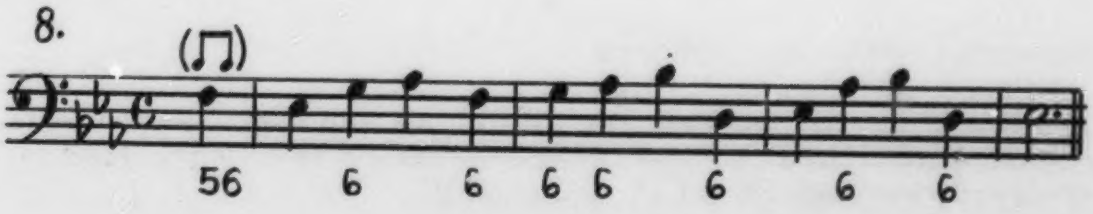
   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals precede the figures affected.
   c. The slanting stroke (₲) is not used.

4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.

(HT, page 43 - No. 8)[1]

8.



(A figure 3, 5 or 8 placed above the first bass note indicates the chord member with which the soprano is to begin; a plus (+) or minus (-) sign indicates the higher or lower possibility in the soprano range.)

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[1] Carl McKinley, Harmonic Relations (Boston, Mass.: New England Conservatory of Music, 1944). Used by permission.

B. Chord symbols

1. Key indication

a. A capital letter without a colon indicates a major key.

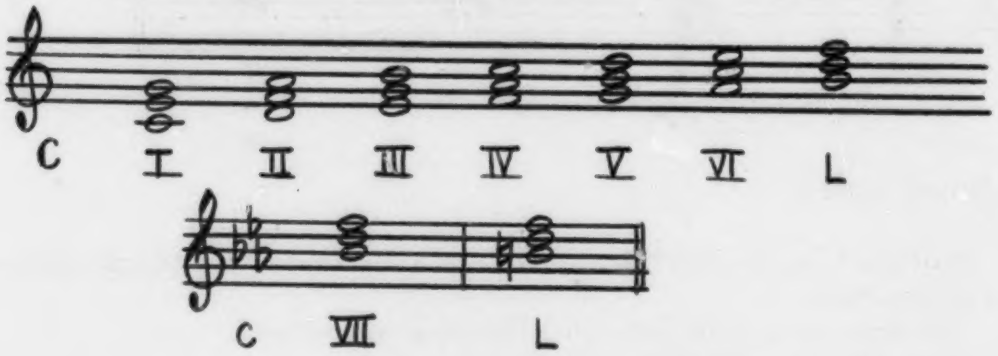
C B♭ F♯

b. A small letter without a colon indicates a minor key.

c b♭ f♯

2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads, with one exception; the diminished triad on the leading tone is symbolized by the letter L. The subtonic chord in the minor key, built upon the natural seventh degree, is labeled VII.



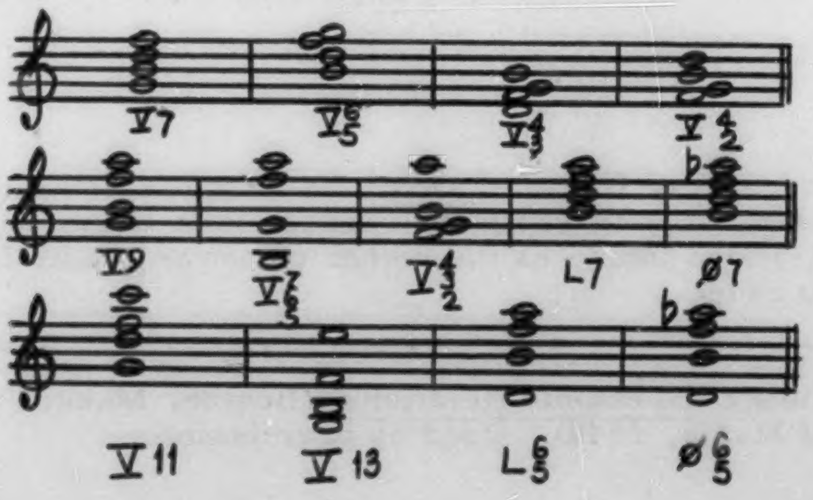
3. Inversions

The Arabic numerals are placed to the right of the Roman numeral to show inversions.

I6 I^{6}_{4}

4. Seventh (ninth, etc.) chords

Dominant chords through the thirteenth are discussed; the leading tone (half-diminished) seventh chord in major is L7, the leading tone (diminished) seventh chord in minor is ø7.

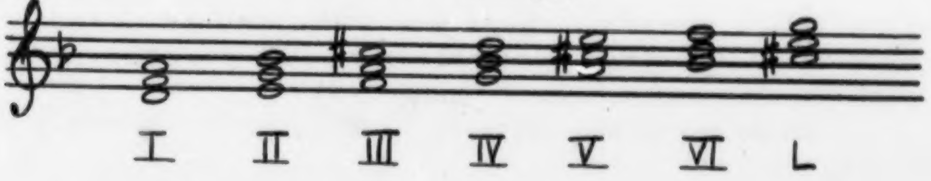


MC KINLEY (HR)

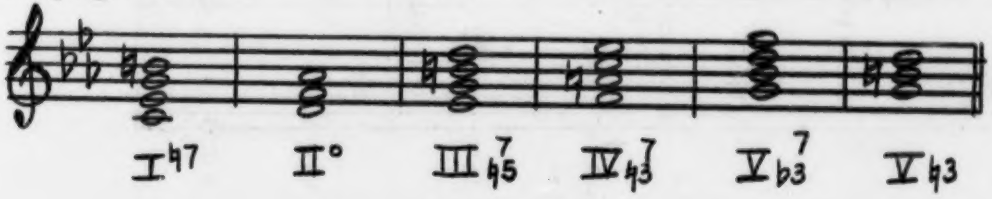
5. Altered tones

As a general rule McKinley expresses altered tones by combining the figures and accidentals from figured bass with the Roman numeral. However, there are several discrepancies and many times alterations are not shown; this is especially true of those chords made from the variable degrees of the minor scale.

(HR, page 37 - second music example)[1]

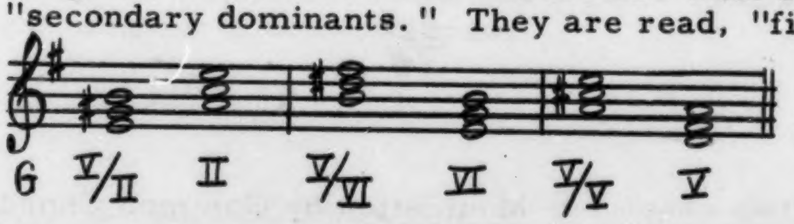


The following chords are taken from the exercises which appear on page 69:[1]

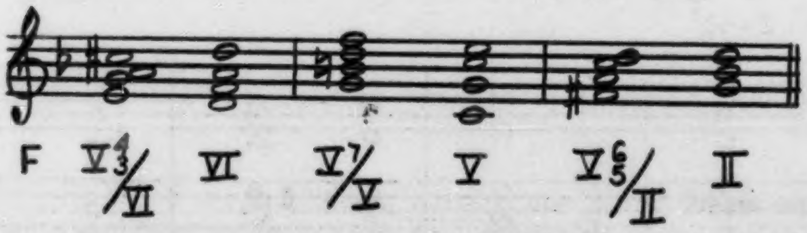


In addition to showing alterations by borrowing accidentals and numerals from figured bass, McKinley has a number of special symbols for the more common altered chords. Among these are the following:

a. Neighbor dominant triads - these are what are usually termed "secondary dominants." They are read, "five of five," etc.



b. Neighbor dominant seventh chords (ND)



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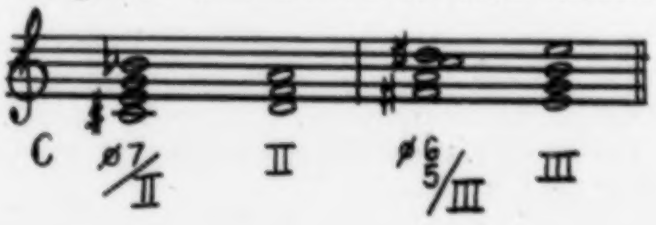
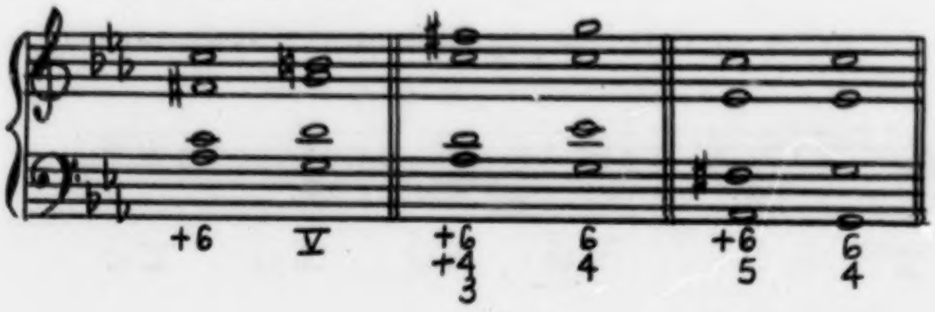
[1] Carl McKinley. Harmonic Relations (Boston, Mass.: New England Conservatory of Music, 1944). Used by permission.

c. Neighbor diminished seventh chords



d. Augmented sixth chords - these are indicated as in the following example since the author feels there is "no purpose in indicating them with Roman numerals." (page 98)[1]

(HR, page 98 - Ex. 2-a, b, c)[1]



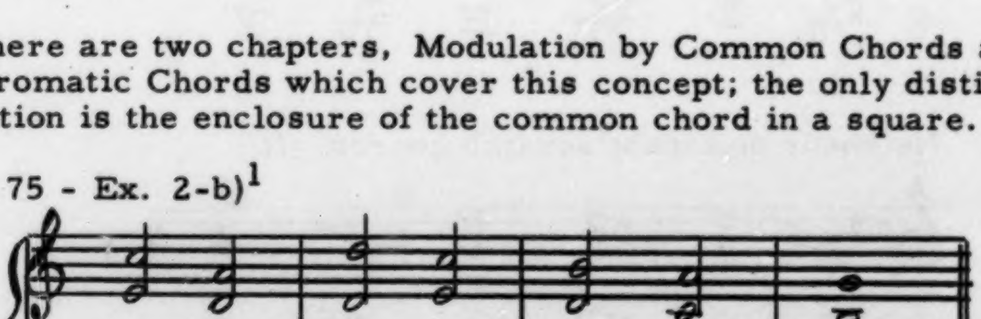
e. In distinction to the neighbor triads, seventh chords and diminished sevenths which are symbolized ø7/V, "diminished seventh of five," McKinley says it is sometimes helpful to indicate the tone on which the diminished seventh is built. The horizontal line is an abbreviation of "on". The diminished seventh on F♯:

$$\frac{ø7}{F\sharp}$$

6. Modulation

There are two chapters, Modulation by Common Chords and Modulation by Chromatic Chords which cover this concept; the only distinctive symbolization is the enclosure of the common chord in a square.

(HR, page 75 - Ex. 2-b)[1]



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[1] Carl McKinley, Harmonic Relations (Boston, Mass.: New England Conservatory of Music, 1944). Used by permission.

C. Nonharmonic tones

These are called "non-chord tones"; the definitions are given in the following table. The author says (page 106)[1]: "Neighbor tones approached by a leap are generally described as appoggiaturas. There seems no reason in an English text-book for perpetuating this clumsy and inconvenient word, which might better be translated as 'leaning tone,' and we will indicate them simply with the letter N." The examples show "leaning tones" on both strong and weak rhythmic points.

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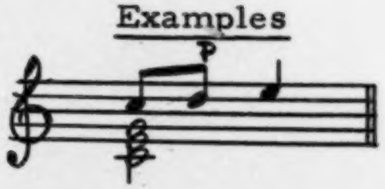
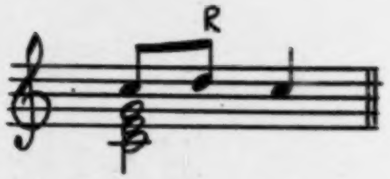
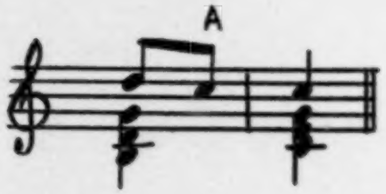
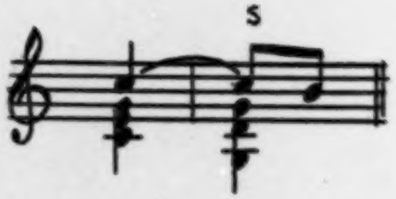
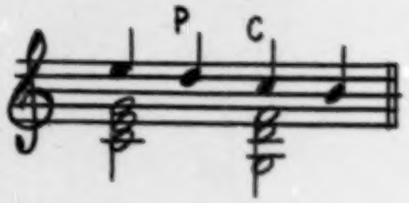
[1] Carl McKinley, Harmonic Relations (Boston, Mass.: New England Conservatory of Music, 1944). Used by permission.

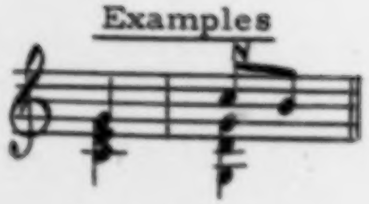
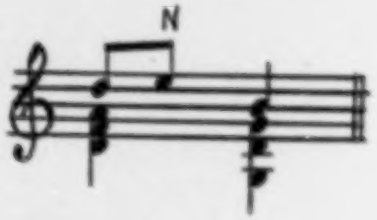
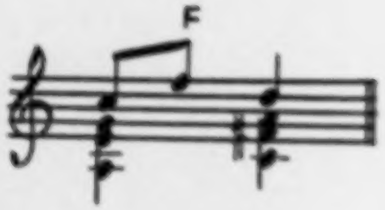
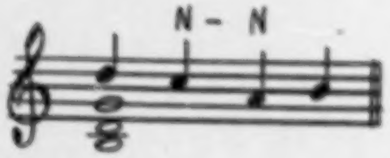
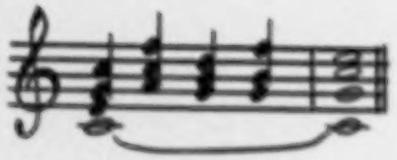
MC KINLEY (HR)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing tone	P		By step	By step	Same as approach
Returning tone	R		By step	By step	Opposite to approach
Anticipation	A		By step or skip	Repeated note	Same tone
Suspension (or retardation)	S		By same tone	By step	Down or up
Accented neighbor note (Nota Cambiata)	C		By step	By step	Same as approach

MC KINLEY (HR)

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Leaning tones	N		By leap	By step	Opposite to approach
Neighbor note left by leap	N		By step	By leap	Opposite to approach
Free tone	F		By leap	By leap	Opposite to approach
Compound Neighbor group	N-N		By step or skip	By skip or step	
Pedal point			Held tone - member of first and last chords		

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MACPHERSON (MH)

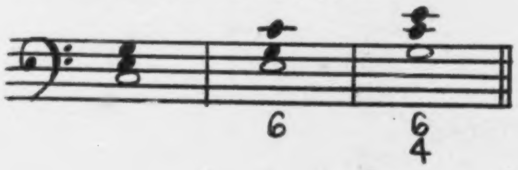
After a discussion of the rudiments of music, this book attempts to show the young student both the contrapuntal and harmonic aspects of theory. He begins with melody writing and continues, in a limited way, through two- and three-part contrapuntal writing before undertaking four-part harmonic writing.

A. Figured bass

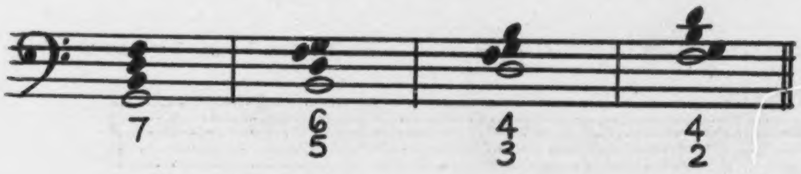
While figured bass is explained, there is only a limited use made of it, since chord inversions are shown by another method. (see below).

Arabic numerals are placed below the bass part.

1. Triads and inversions

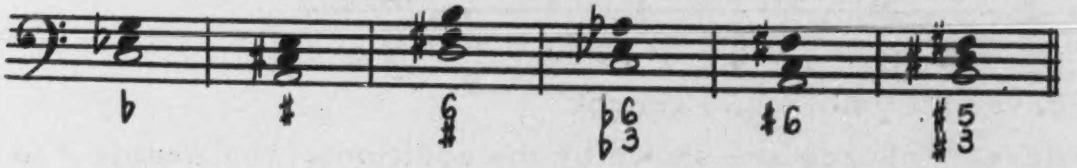


2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals precede the figures affected.
   c. The slanting stroke (6̸) is not used in the figured bass exercises, but see below for the use of the slanting stroke in connection with the chord symbol.

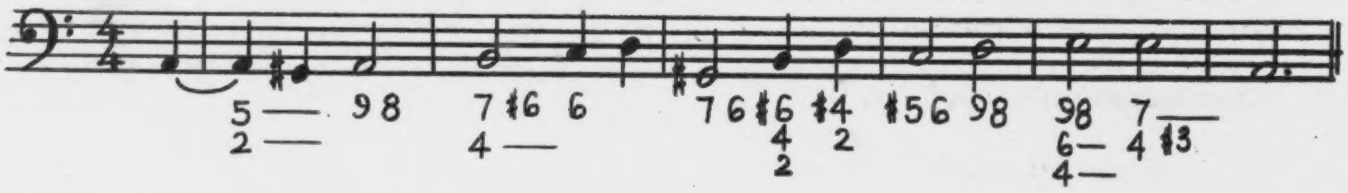


4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. A dash indicates that a tone is held or repeated.

MACPHERSON (MH)

(MH, page 144 - Ex. I. (ii))[1]


5 — 9 8 7 ♯6 6 7 6 ♯6 ♯4 ♯5 6 9 8 9 8 7 —
2 — 4 — 4 2 6— 4 ♮3
2 4—

B. Chord symbols

1. Key indication

Keys are usually written out:

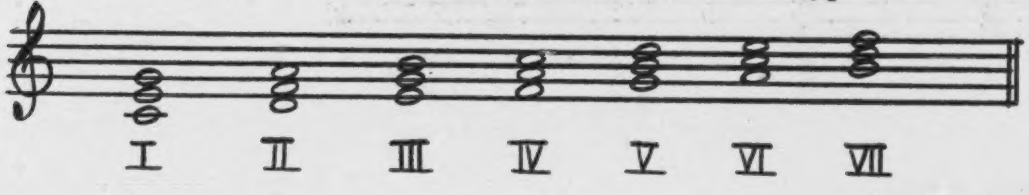
C major	B♭ major	F♯ major
C minor	B♭ minor	F♯ minor

Occasionally these are abbreviated:

C maj.	B♭ maj.	F♯ maj.
C min.	B♭ min.	F♯ min.

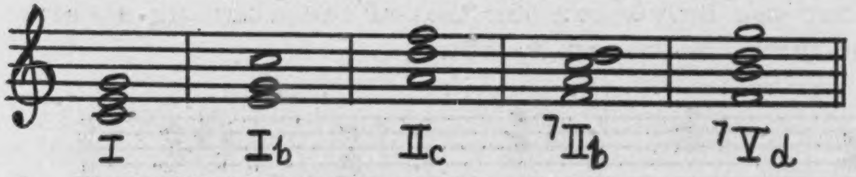
2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.


I
II
III
IV
V
VI
VII

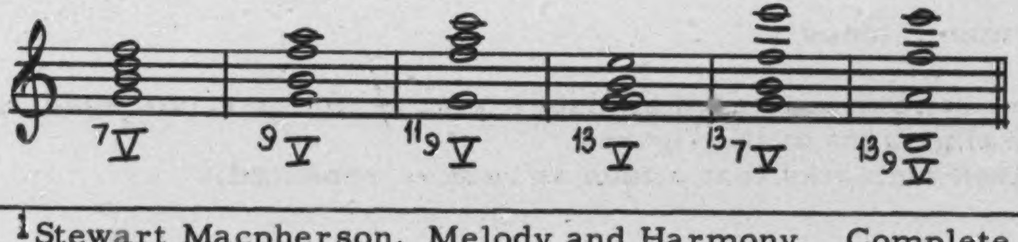
3. Inversions

Inversions are indicated by the addition of the subscript b, c, d, etc. to the lower right of the Roman numeral.


I
I b
II c
7 II b
7 V d

4. Seventh (ninth, etc.) chords

Seventh chords are shown by the addition of the Arabic 7 to the upper left of the Roman numeral. The higher discords sometimes show a combination of two numerals.


7 V
9 V
11 9 V
13 V
13 7 V
13 9 V

---

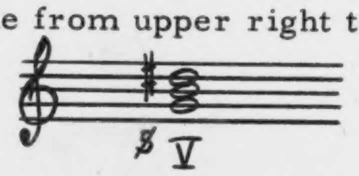
[1] Stewart Macpherson, Melody and Harmony. Complete Volume. (New York: Mills Music, Inc., 1920). Used by permission.

MACPHERSON (MH)

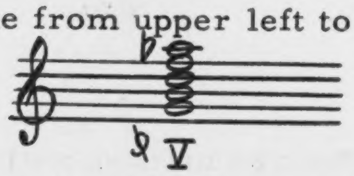
5. Altered tones

Slanting strokes in different directions are used to indicate raised and lowered chord members.

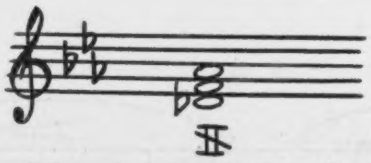
A stroke from upper right to lower left means raised:



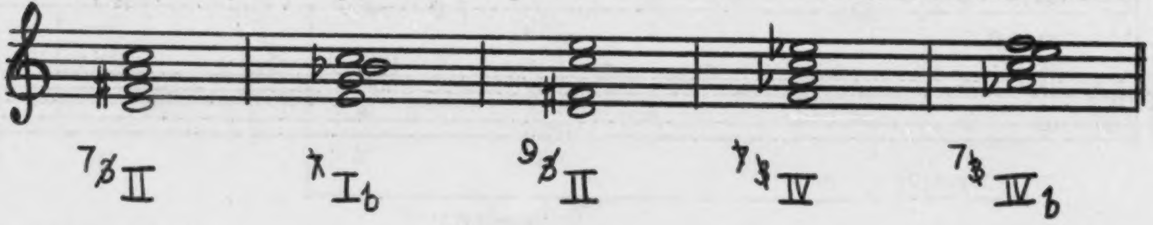
A stroke from upper left to lower right means lowered:



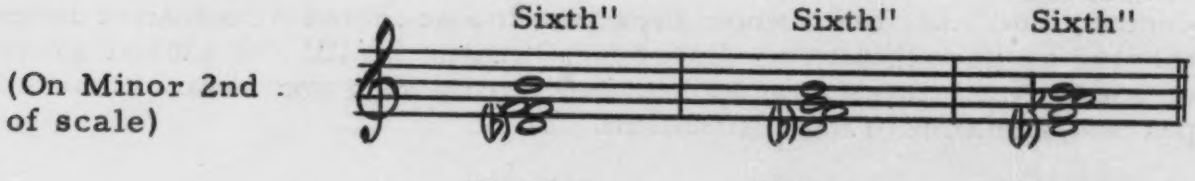
If the root is altered the stroke is drawn through the Roman numeral.

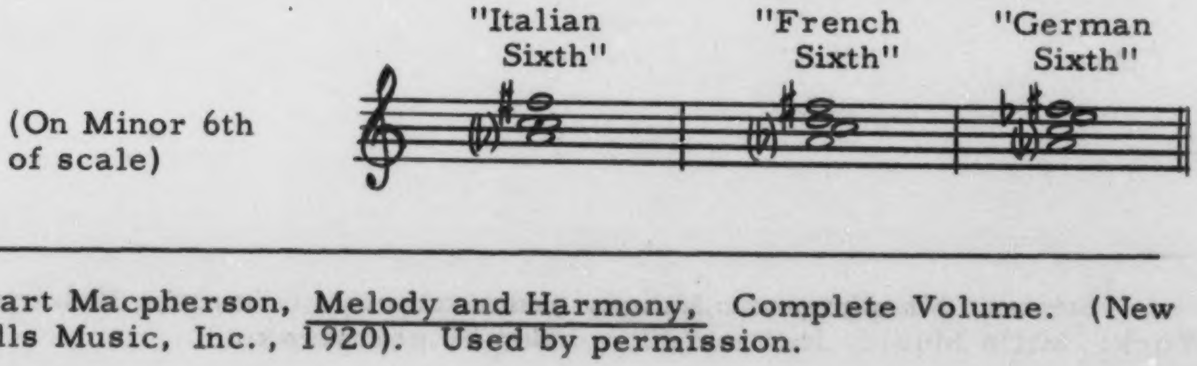


This makes a complicated symbol for an altered seventh chord.


7♯ II
7 I♭
9♯ II
7♭ IV
7♮ IV♭

Macpherson explains the tradional augmented sixth chords as being found "upon the minor 2nd and minor 6th degrees of the major or minor scales respectively and are found in the following forms:" (page 242)[1]


"Italian Sixth"
"French Sixth"
"German Sixth"
(On Minor 2nd of scale)


"Italian Sixth"
"French Sixth"
"German Sixth"
(On Minor 6th of scale)

---

[1] Stewart Macpherson, Melody and Harmony, Complete Volume. (New York: Mills Music, Inc., 1920). Used by permission.

MACPHERSON (MH)

The symbols for these chords (given on page 245) are not strictly accurate, but rather show the two altered degrees that make up the interval of the augmented sixth.

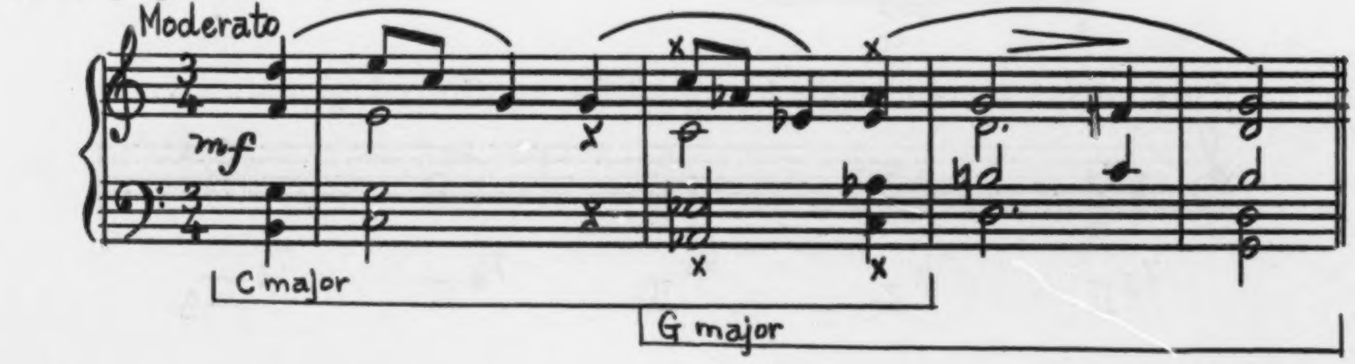
It.	Fr.	Ger.
$^{6}\cancel{\text{II}}$	$^{6}\cancel{\text{II}}$	$^{6}\cancel{\text{II}}$

It.	Fr.	Ger.
$^{\cancel{6}}\cancel{\text{VI}}$	$^{\cancel{6}}\cancel{\text{VI}}$	$^{\cancel{6}}\cancel{\text{VI}}$

6. Modulation

In symbolizing modulation, the keys are marked with brackets and the "pivot-chord" with an x. The pivot-chord may be diatonic or chromatic in one or both keys.

(MH, page 248 - (iii))[1]



C. Nonharmonic tones

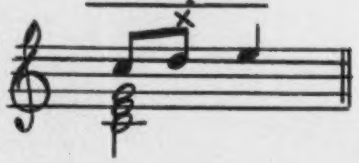
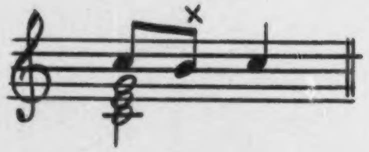
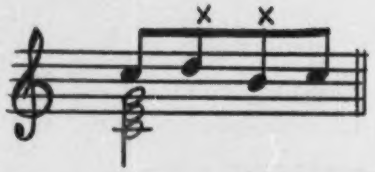
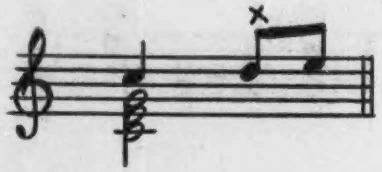
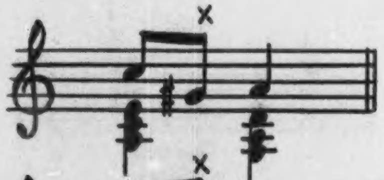
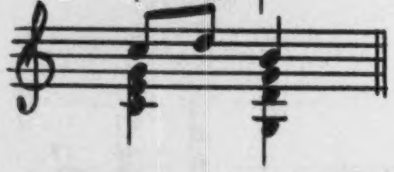
The student is first introduced to "unessential notes" in the early stages of the book when he is doing two-part writing. Any note which is approached or quit by step is called a "passing-note," whether it returns to the same tone or goes on to another tone. The "passing-notes" may be accented or unaccented, but later the author says that the accented dissonance is more properly termed an appoggiatura. Later (in Chapter XVII), the author gives examples of unessential notes approached and left by step and skip without assigning a particular name to each situation.

---

[1] Stewart Macpherson, Melody and Harmony, Complete Volume. (New York: Mills Music, Inc., 1920). Used by permission.

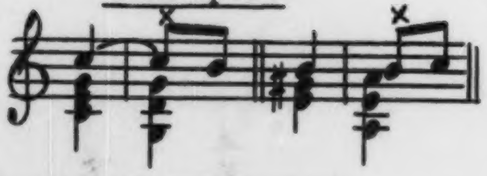
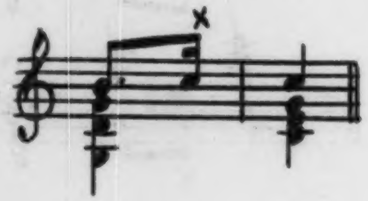
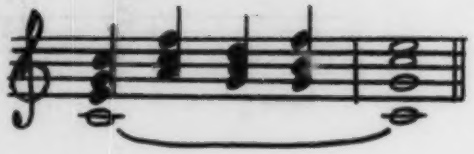
MACPHERSON (MH)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing-notes: (Unaccented)	None are used - x marks the dissonant tone.		By step	By step	Same as approach
(Auxiliary)			By step	By step	Opposite to approach
(Changing-notes)			By step and skip	By skip and step	
(Appoggiatura)			By step or leap	By step	
(Unnamed)			By skip	By step	Opposite to approach
(Unnamed)			By step	By skip	Opposite to approach

MACPHERSON (MH)

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Suspension (tied or struck)	None are used - x marks the dissonant tone.		By same tone	By step	Up or down
Anticipation			By step	By same tone	Repeated note
Pedal			Held note - part of first and last chords		

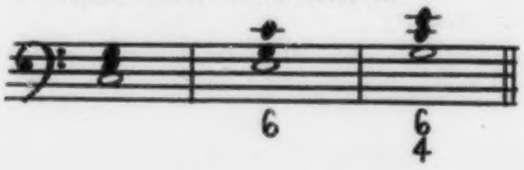
MITCHELL (EH)

Exercises for student solution are grouped together at the end of the book.

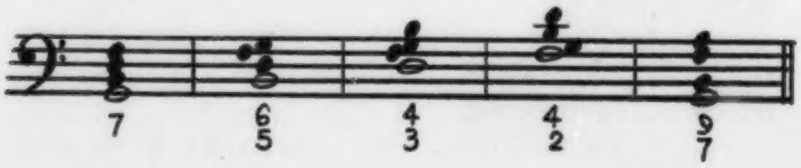
A. Figured bass

Most of the examples of figured bass show a melody and a bass part with the figures appearing between the two staves. There are a few examples of the bass part alone with the figures below it.

1. Triads and inversions



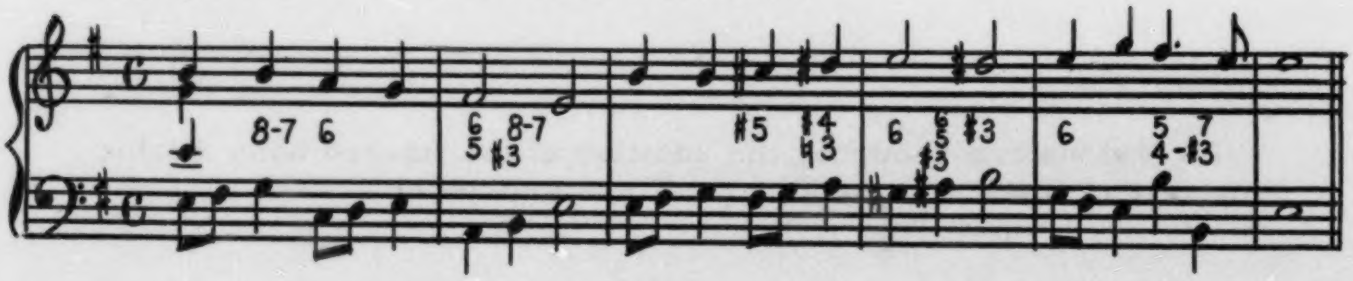
2. Seventh (ninth etc.) chords and inversions



3. Altered tones

   a. Accidentals precede the figures affected.
   b. An accidental alone is not used.
   c. The slanting stroke (6̸) is not used.

(EH, page 282, b. "Jesu, meine Freude.")[1]



4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.

---

[1] William J. Mitchell, Elementary Harmony (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1948). Used by permission.

b. Figures connected by a dash indicate motion in a single upper part.

c. Passing tones in the bass show no figures; see the example just given above.

B. Chord symbols

1. Key indication

a. A major key is shown by a capital letter followed by a plus sign: C+ = C major

b. A minor key is shown by a capital letter followed by a minus sign: C- = C minor

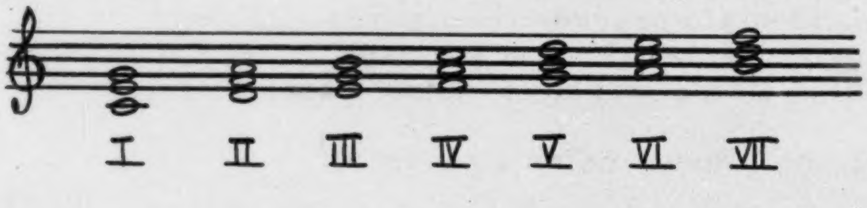
(Mitchell, in the early chapters of the book, initiated a system of naming intervals in which the following abbreviations occurred:

+ means major
- means minor
p. means perfect
d. means diminished
a. means augmented

Intervals were then written as follows: +6, -3, p. 5, d. 4, a. 6, etc.)

2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.



3. Inversions

Inversions are shown by the addition of the figured bass Arabic numerals at the lower right of the Roman numeral:

I_6 $V_{\substack{6\\4}}$

4. Seventh (ninth, etc.) chords

The root position seventh chord is shown by the addition of the Arabic seven at the upper right of the Roman numeral:

I^7 V^7

The figures showing an inversion of a seventh chord are placed to the lower right of the Roman numeral as indicated above for triads:

$II_{\substack{6\\5}}$ $V_{\substack{4\\3}}$ V_2

The ninth chord is indicated:

$V_{\substack{9\\7}}$

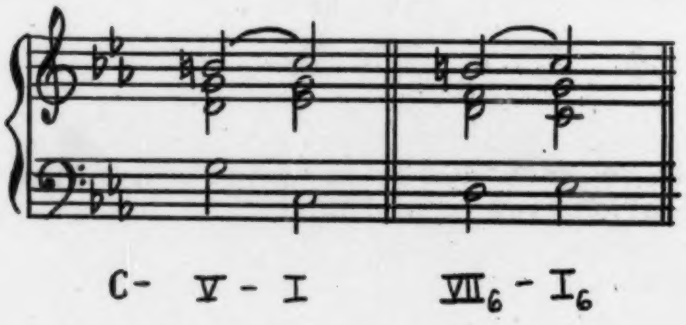
MITCHELL (EH)

5. Altered tones

Since the Mitchell book is concerned with elementary harmony, chords with extreme chromatic alterations are not covered. The altered chords which are built from the tones in the major and the usual forms of the minor scale are given below. However, Mitchell is not consistent in symbolizing altered chords. At least three kinds of symbolization appear in the book.

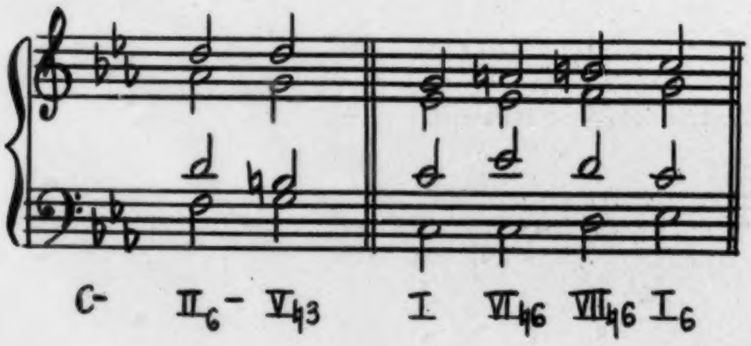
a. An altered tone is not shown by the chord symbol.

(EH, page 104 - Ex. 198)[1]



b. An altered tone is shown by the chord symbol; the alteration, as it would be in figured bass is placed at the lower right of the Roman numeral.

(EH, page 107 - Ex. 203, Ex. 205)[1]



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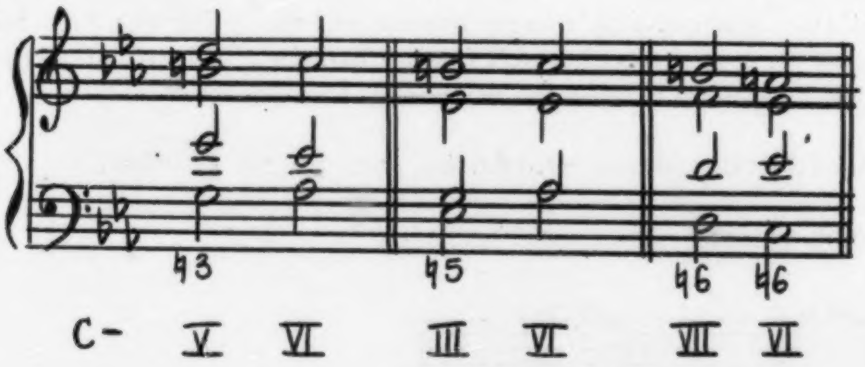
[1] William J. Mitchell, Elementary Harmony (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1948). Used by permission.

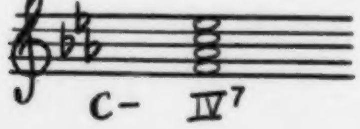
c. An altered tone is not shown by the chord symbol, but is indicated in the figured bass.

(EH, page 105 - Ex. 200)[1]

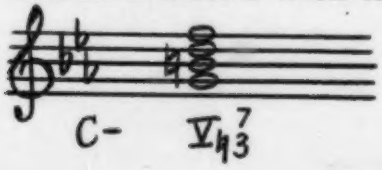


A table of the commonly used seventh chords in major and minor keys shows the following symbolization (see page 155):[1]

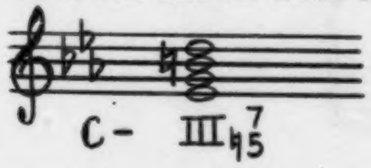
a. Diatonic seventh chord



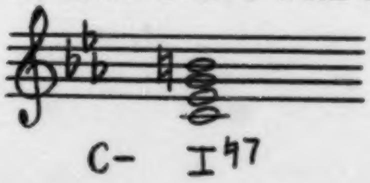
b. Seventh chord with the third altered



c. Seventh chord with the fifth altered



d. Seventh chord with the seventh altered



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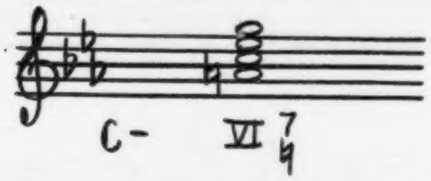
[1] William J. Mitchell, Elementary Harmony (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1948). Used by permission.

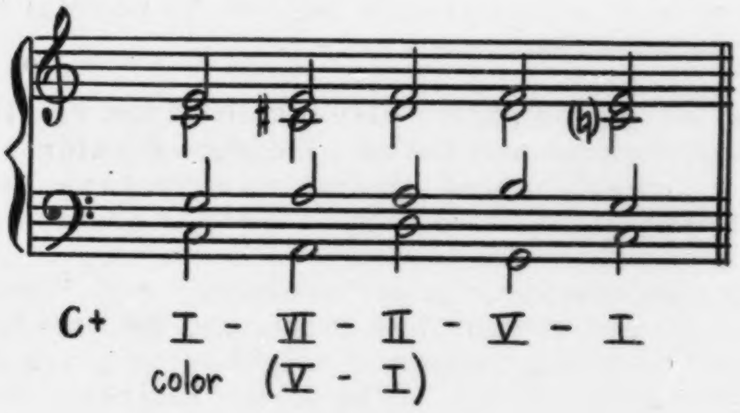
e. Seventh chord with the root altered. The accidental which is not followed by a figure refers to the root of the chord, not the third of the chord; compare b., above.



The majority of the examples in the book show altered tones in terms of the figured bass numerals, without trying to combine these with the Roman numeral chord symbol.

What Mitchell calls "applied dominant relationships" (secondary dominants) include altered chords which function as V or VII of some diatonic chord (other than I). He says these have the "color" of V-I or VII-I but do not produce a modulation. These applied dominant relationships are shown in parenthesis below the normal chord symbol:

(EH, page 194 - Ex. 365)[1]



6. Modulation

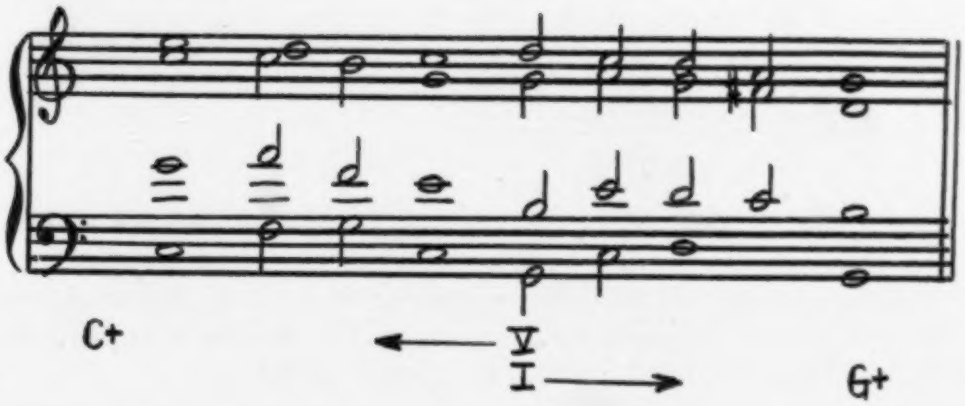
After explaining how a key is established, Mitchell explains that modulation depends upon approaching the pivotal chord as if it were in one key and quitting that chord as if it were in another key. This is symbolized as follows:

---

[1] William J. Mitchell, Elementary Harmony (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1948). Used by permission.

MITCHELL (EH)

(EH, page 214 - Ex. 396)[1]



C. Nonharmonic tones

These are called "dependent tones" or "tones of figuration." As will be seen from the following chart, Mitchell uses the terms passing tone and neighboring tone to identify a number of situations which are given different names in other books. The chordal skip and the passing tone fill in skips, the neighboring tone decorates a principal tone; the suspension and anticipation shift the rhythm so that a tone is held beyond its normal length or arrives ahead of its normal position.

There is a most detailed and complete discussion of the relation of decorative tones to parallel octaves and fifths. He shows which situations are allowed and which are forbidden, and illustrates each case, not only with composed examples, but also with examples from literature.

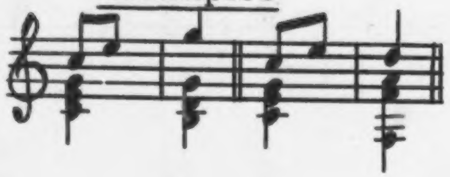
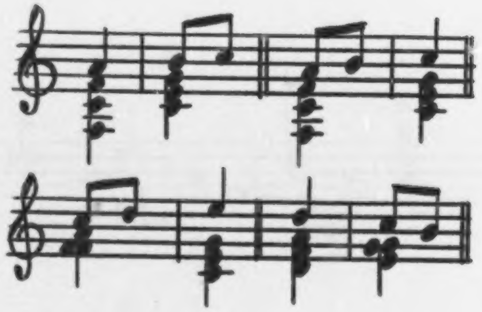
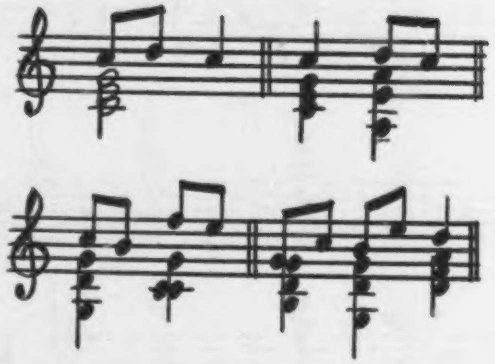
In addition to the common distinctions of "accented" and "unaccented," Mitchell also has categories of consonant and dissonant; he thus has "consonant" and "dissonant" passing tones and neighboring tones and also "consonant" and "dissonant" suspensions. The term "indirect" indicates that two voices share a dependent tone; for example, an indirect suspension indicates that the preparation occurs in one voice, while the suspension occurs in another.

---

[1] William J. Mitchell, Elementary Harmony (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1948). Used by permission.

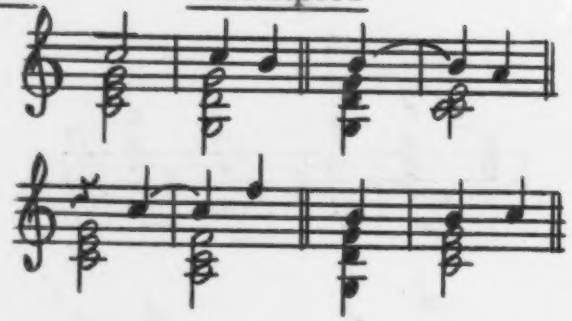
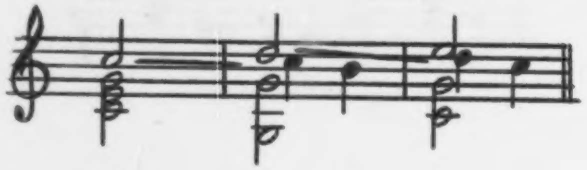
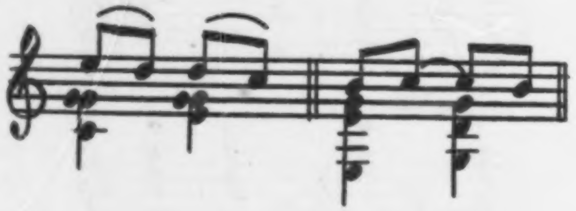
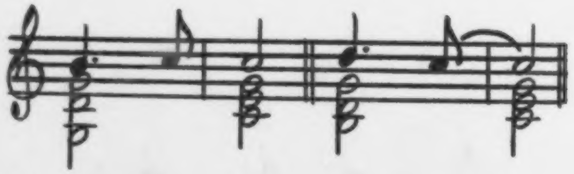
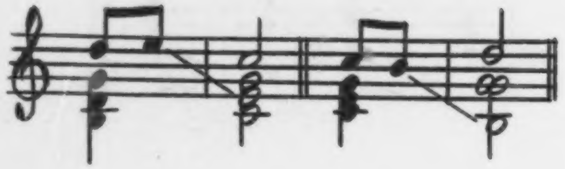
MITCHELL (EH)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
The chordal skip	none		By skip	By skip or step	Same as approach Opposite to approach
The passing tone May be: Accented Unaccented Consonant Dissonant Ascending Descending	p. t.		By step	By step	Same as approach
The neighboring tone May be: Accented Unaccented Complete Incomplete Consonant Dissonant	N.		By step By skip	By step	Opposite to approach

MITCHELL (EH)

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
The suspension May be tied or repeated note Consonant Dissonant	S.		Same note	By step	Down or up
Indirect suspension			Different voice	By step	Down
Suspended passing tones and neighboring tones			By step	By step	
Anticipation	Ant.		By step	Same note	Same note
Indirect Anticipation			Different voice		

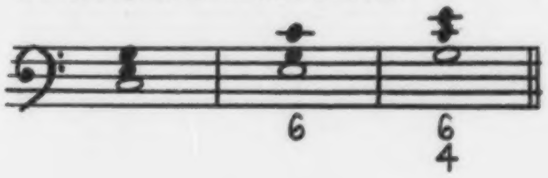
MURPHY & STRINGHAM (CHM)

A. Figured bass

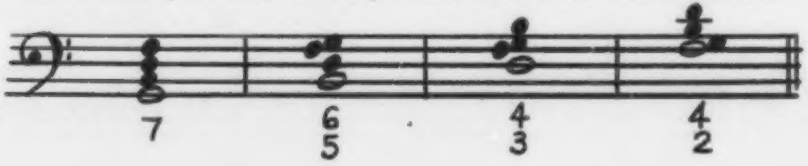
There are few figured bass exercises for the student to solve in the early part of this book. Although the student uses figures in connection with the Roman numeral to show chords in inversion beginning in Chapter IV, the complete explanation of figured bass is not given until page 366.

Arabic numerals are placed below the bass part.

1. Triads and inversions

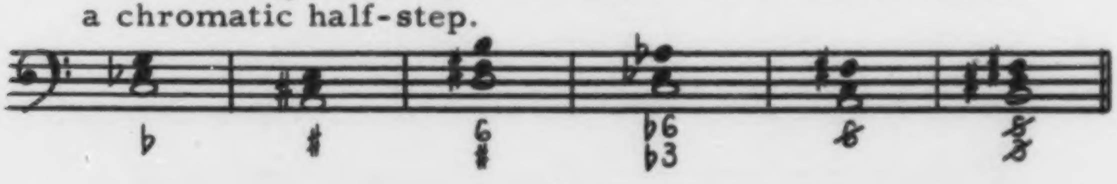


2. Seventh (ninth, etc.) chords and inversions



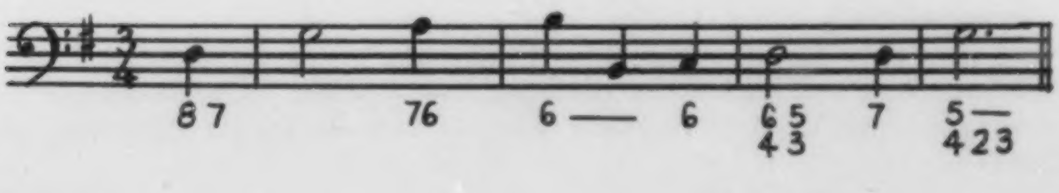
3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals precede the figures affected.
   c. The slanting stroke (6̸) indicates that a tone is raised a chromatic half-step.



4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. A dash indicates that a tone is held or repeated.



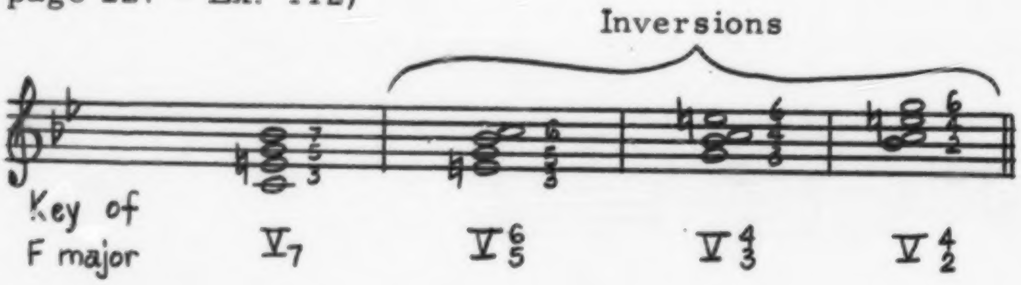
MURPHY & STRINGHAM (CHM)

B. Chord symbols

1. Key indication

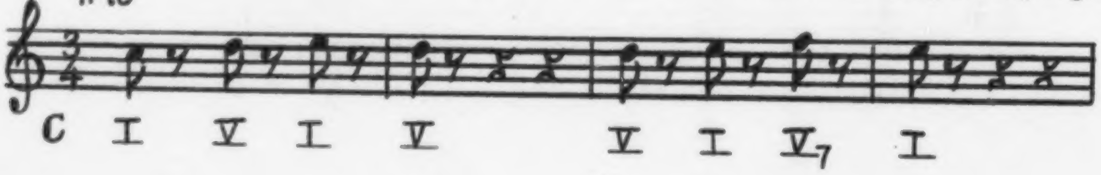
The key in which the Roman numeral analysis occurs is usually not indicated. However, there are a few cases like the following:

(CHM, page 227 - Ex. 112)[1]



(CHM, page 229 - Ex. 114)[1]

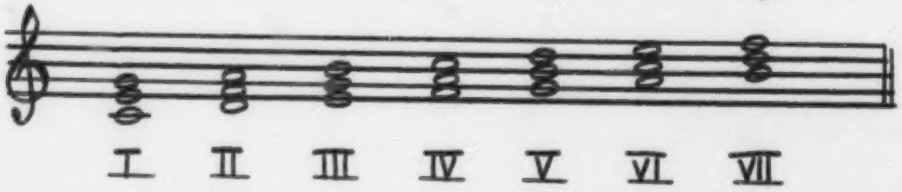
Mozart, G Major Symphony



When a key is indicated in the text it is usually written out, as: B flat major or G minor. In the Analytic Table of Contents "capital letters refer to major keys and small letters to minor keys."

2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.



This book also indicates chords by letters: C G_7 C_6 C_4^6, etc.

3. Inversions

These are indicated by placing the Arabic figures to the lower right, if a single figure, and to the right, if two or more figures, of the Roman numeral. I_6 I_4^6

---

[1] Howard Ansley Murphy & Edwin J. Stringham, Creative Harmony and Musicianship (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1951). Used by permission.

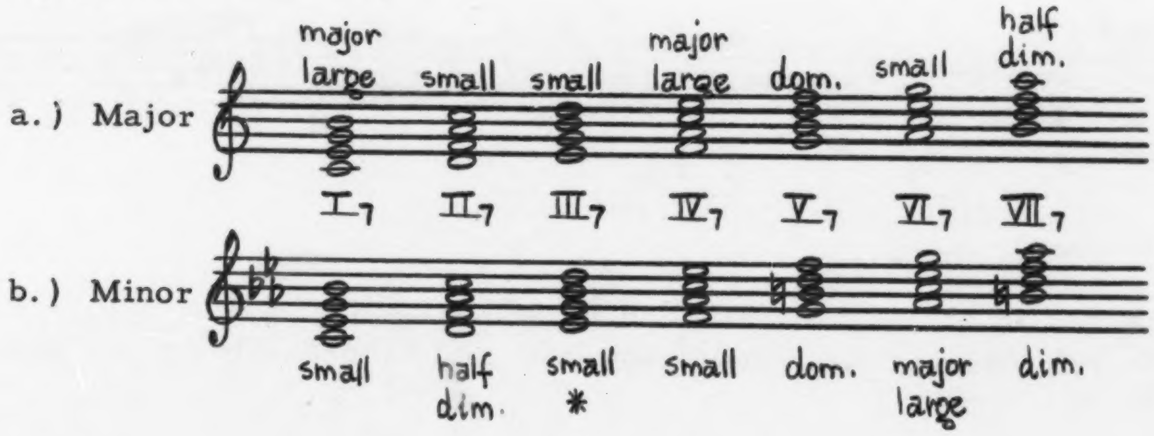
MURPHY & STRINGHAM (CHM)

4. Seventh (ninth, etc.) chords

$V_7 \quad V^6_5 \quad V^4_3 \quad V^4_2 \quad V_9$

The authors also give the following names to types of seventh chords:

(CHM, page 505 - Ex. 215)[1]


major large
small
small
major large
dom.
small
half dim.
a.) Major
I7
II7
III7
IV7
V7
VI7
VII7
b.) Minor
small
half dim.
small *
small
dom.
major large
dim.

*This is obviously a mistake, since the chord contains a major triad and a large seventh.

There is a footnote (page 505) which refers the reader to Wedge, Applied Harmony, Book I, page 109, for a complete list of seventh chords with suggested symbols.

5. Altered tones

Altered chords, as such, are not discussed, and there are no cases of symbolization of an altered chord. Chromatic alteration is usually explained as a modulation. In discussing intervals, major and minor are sometimes symbolized by a plus (+) and a minus (-) sign.

6. Modulation

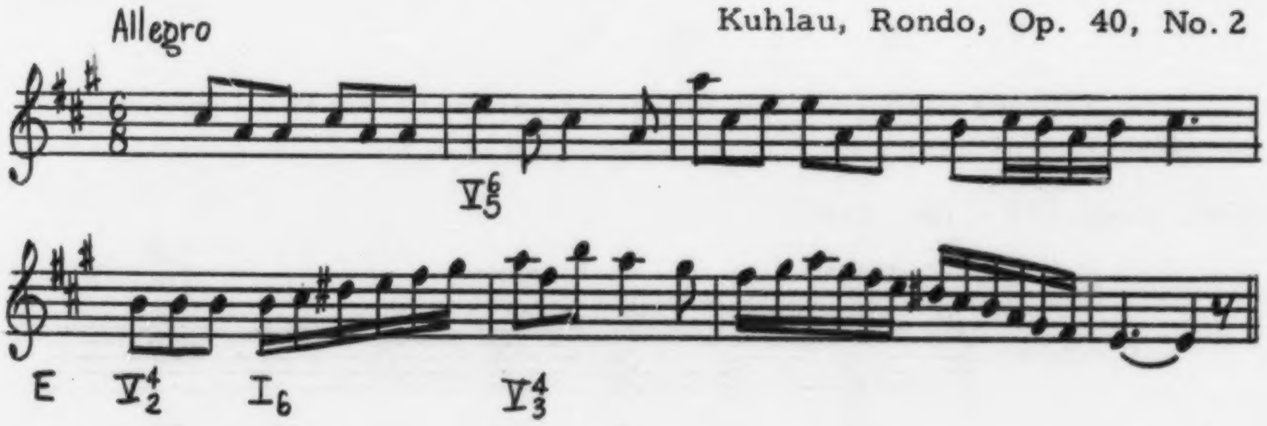
While modulation to a great variety of keys is discussed, there is no particular kind of symbolization to indicate this. Common chords are not shown and the keys are usually indicated as below.

---

[1] Howard Ansley Murphy & Edwin J. Stringham, Creative Harmony and Musicianship (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1951). Used by permission.

MURPHY & STRINGHAM (CHM)

(CHM, page 236 - 4, (e))[1] To be harmonized.



Kuhlau, Rondo, Op. 40, No. 2

C. Nonharmonic tones

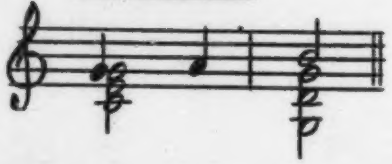
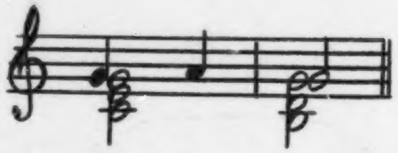
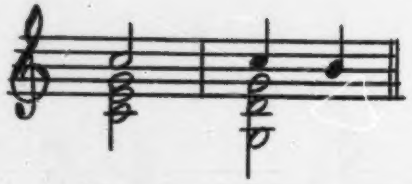
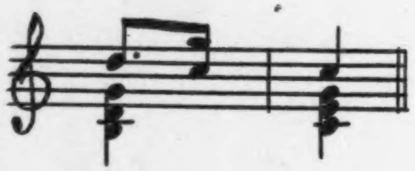
Nonharmonic tones (also referred to as inharmonic) are primarily defined by how they are approached and left, and secondarily as to whether or not they are accented.

---

[1] Howard Ansley Murphy & Edwin J. Stringham, Creative Harmony and Musicianship (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1951). Used by permission.

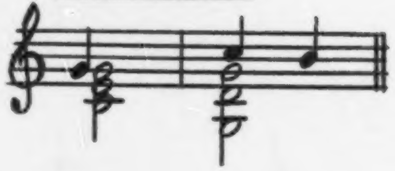
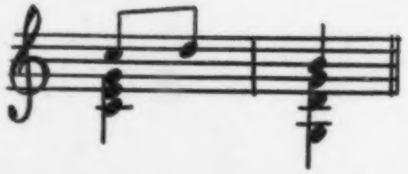
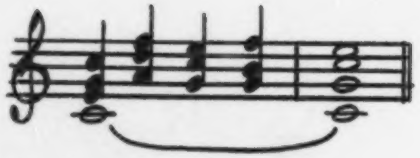
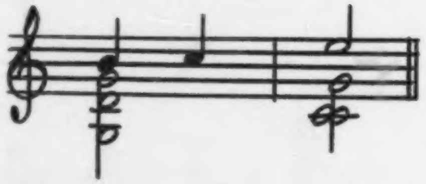
MURPHY & STRINGHAM (CHM)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
passing tone	P.		By step	By step	Same as approach
neighboring tone	N.		By step	By step	Opposite to approach
suspension (tied or struck)			By tie or repeated note	By step	Down
anticipation			By step or skip	By same note	Repeated note

MURPHY & STRINGHAM (CHM)

C. Nonharmonic tones (cont.)

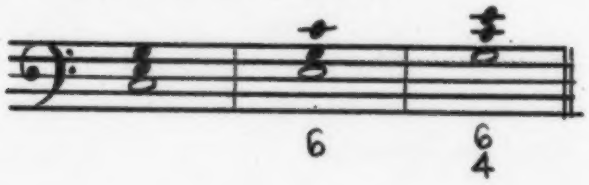
Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
appoggiatura (acciaccatura = short)	app.		By skip	By step	Opposite to approach
échappée			By step	By skip	Opposite to approach
pedal point			Held tone - member of first and last chords		
(free)			The example of a "free" nonharmonic tone (page 49) is an échappée inverted.		

OTTMAN (E, AH)

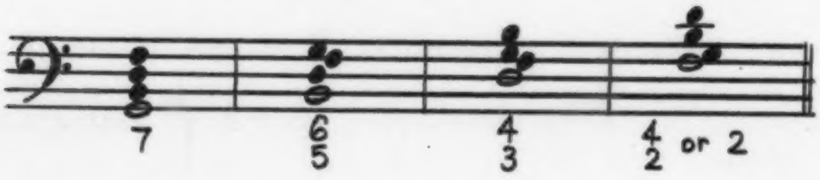
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions

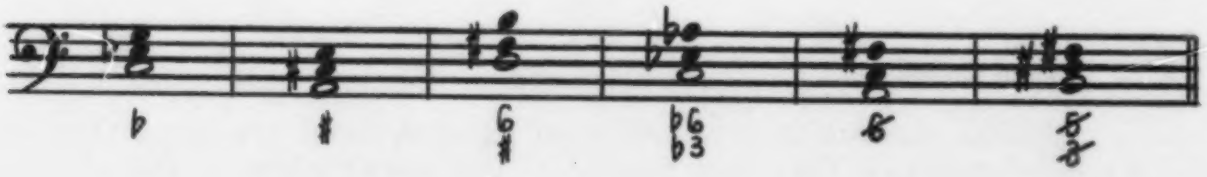


2. Seventh (ninth, etc.) chords and inversions



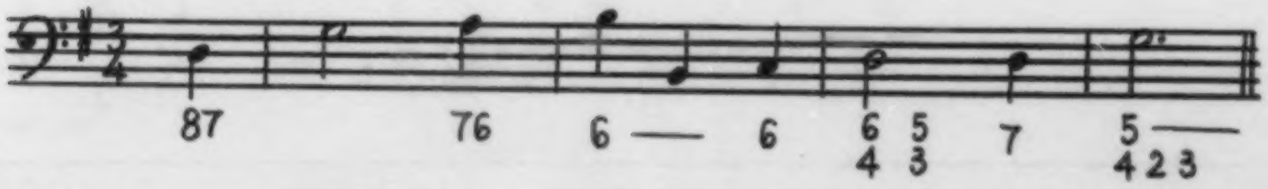
3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals precede the figures affected.
   c. The slanting stroke (6̸) indicates that a tone is raised a chromatic half-step.



4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. A dash indicates that a tone is held or repeated.



OTTMAN (E, AH)

B. Chord symbols

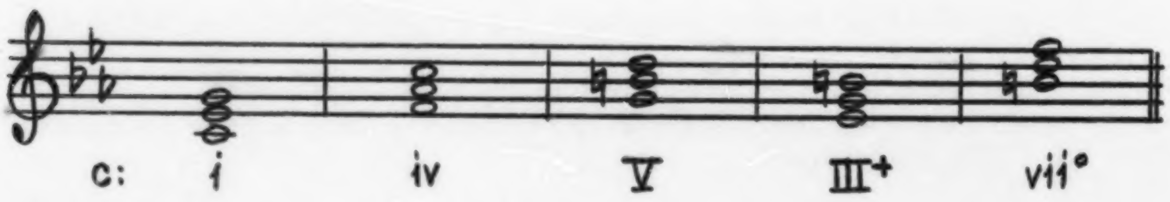
1. Key indication

a. A capital letter indicates a major key.
C: B♭: F♯:
b. A small letter indicates a minor key.
c: b♭: f♯:

2. The Roman numeral chord symbol (triads)

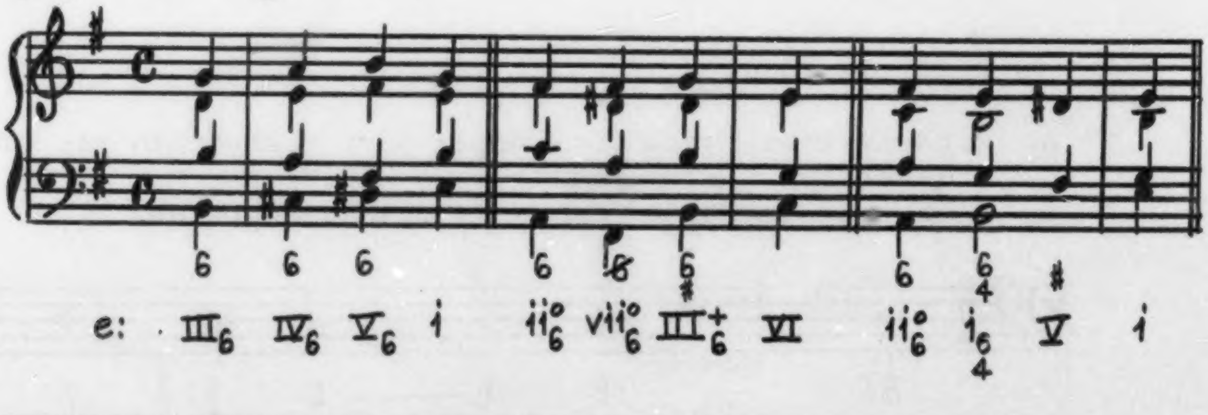
The quality of each triad type is shown by the Roman numeral symbol as follows:

a. A large Roman numeral indicates a major triad.
I V
b. A small (lower-case) Roman numeral indicates a minor triad.
ii iii
c. A large Roman numeral followed by a plus sign indicates an augmented triad.
III+
d. A small Roman numeral with a circle at the upper right indicates a diminished triad.
vii°



3. Inversions

Arabic numerals derived from figured bass are combined with the Roman numeral; they are placed at the lower right of the chord symbol. (EH, page 112 - Fig. 11.11)[1]



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[1] Robert W. Ottman, Elementary Harmony (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1961). Used by permission.

OTTMAN (E, AH)

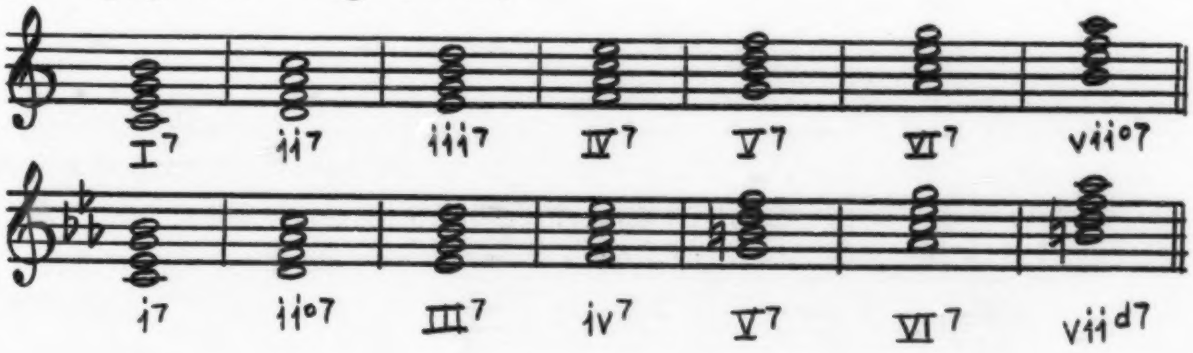
4. Seventh (ninth, etc.) chords and inversions

The Roman numeral indicates the type of triad.

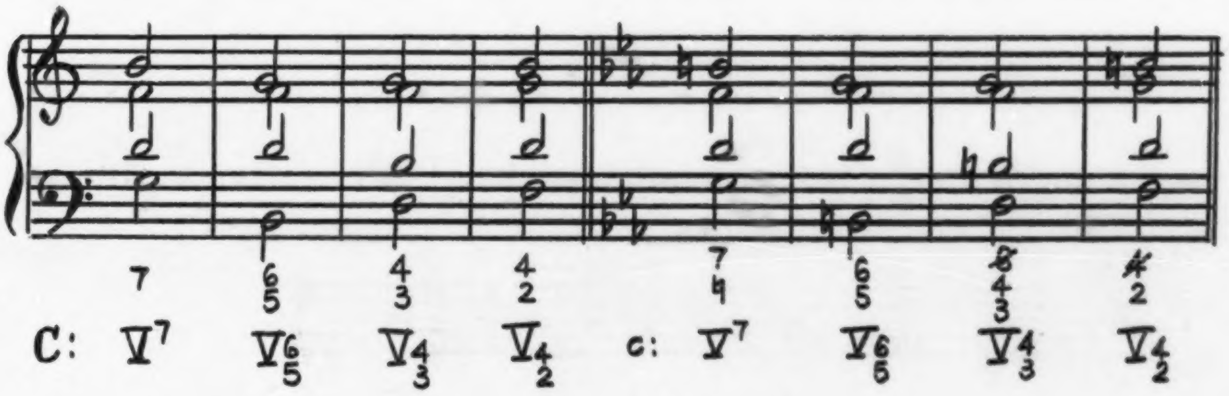
The superscript 7 indicates the addition of a diatonic seventh, except in the case of the diminished seventh chord.

The superscript d7 indicates a diminished seventh chord.

(EH, page 248 - Fig. 20.1.)[1]


I7
ii7
iii7
IV7
V7
VI7
vii°7
i7
ii°7
III7
iv7
V7
VI7
viid7

(EH, page 250 - Fig. 20.2.)[1]


7
6 5
4 3
4 2
7 ♮
6 5
6 4 3
4 2
C: V7
V6 5
V4 3
V4 2
c: V7
V6 5
V4 3
V4 2

5. Altered tones

a. Altered chords are discussed under five categories:

1. "Borrowed" chords
2. Secondary dominant chords
3. Secondary leading tone chords
4. Other altered chords (based on major and minor thirds, i.e., augmented triads and the Neapolitan sixth chord)
5. Augmented sixth chords

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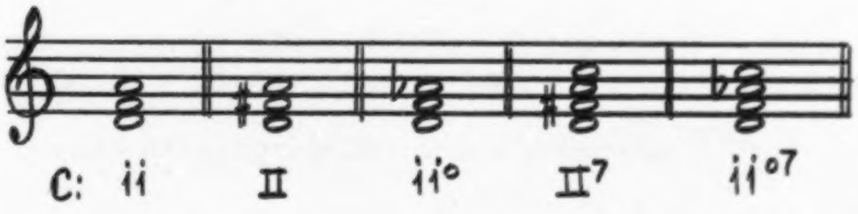
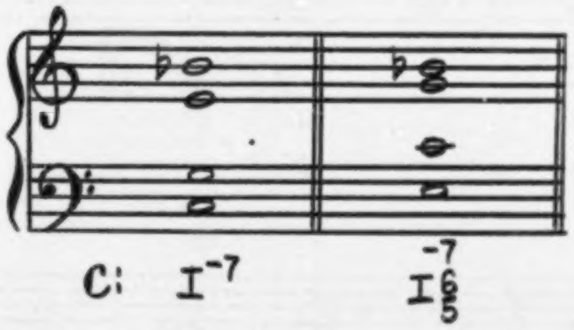
[1] Robert W. Ottman, Elementary Harmony (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961). Used by permission.

OTTMAN (E, AH)

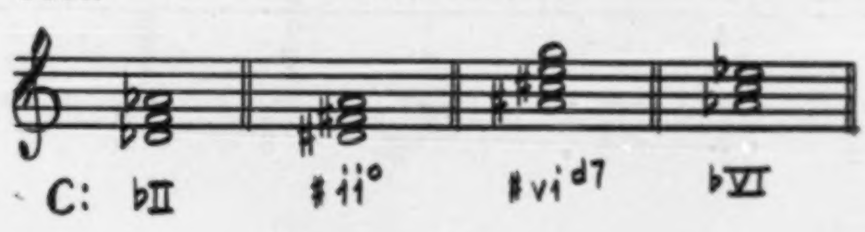
b. The symbolization of an altered triad or seventh chord built on an unaltered scale degree is the same as described above.


C: ii
II
ii°
II^7
$\mathrm{ii}^{\circ 7}$

c. In addition, a lowered seventh is indicated by the superscript $^{-7}$, a minor ninth by -9. This superscript is retained with the Roman numeral when an inversion is indicated.


C: I^{-7}
$\mathrm{I}^{-7}_{\substack{6\\5}}$

d. A sharp or flat before the Roman numeral indicates an altered root.

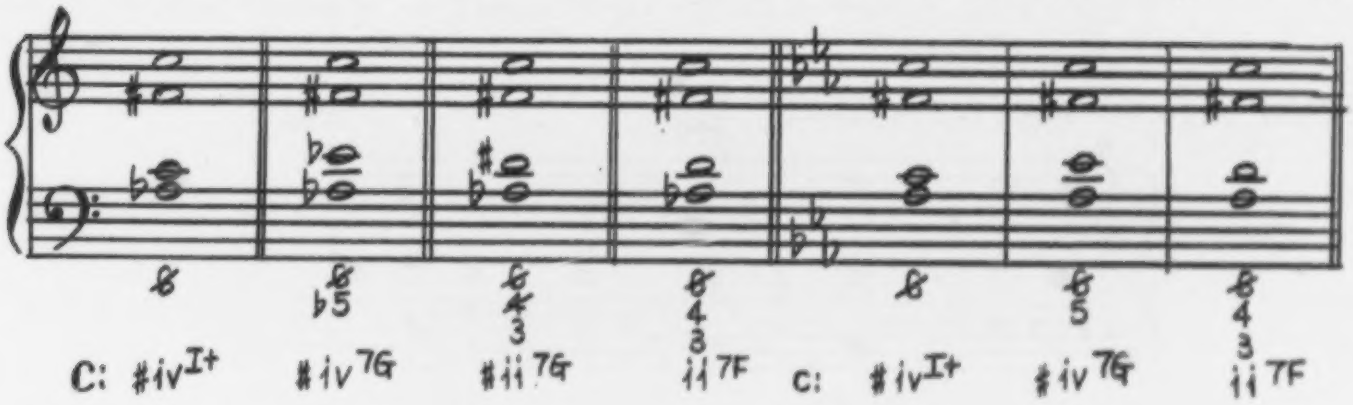

C: ♭II
♯ii°
$\sharp\mathrm{vi}^{d7}$
♭VI

Secondary dominants, secondary leading tone chords, augmented triads and the Neapolitan sixth chord require no new symbolization.

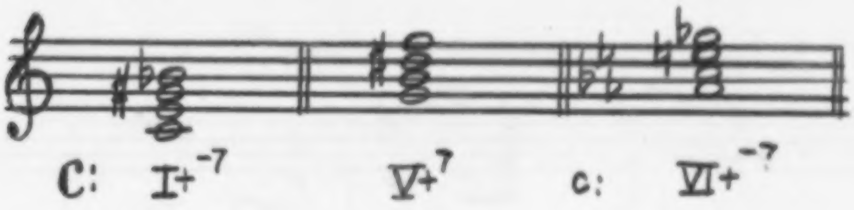
e. Since the augmented sixth chords are built on neither major nor minor triads a new symbolization is needed for these chords. Although the spelling is different in major and minor keys, the symbolization is the same, except that the German augmented sixth chord has an alternate spelling in major.

OTTMAN (E, AH)

(AH, page 184 - Fig. 11.8. - 186 - Fig. 11.12.)[1] (Page 181 - Fig. 11.2.)[1]


8
8 b5
6 4 3
8 4 3
8
6 5
8 4 3
C: #iv I+
#iv 7G
#ii 7G
ii 7F
c: #iv I+
#iv 7G
ii 7F

f. Augmented seventh chords (i. e., an augmented triad with a minor seventh.)



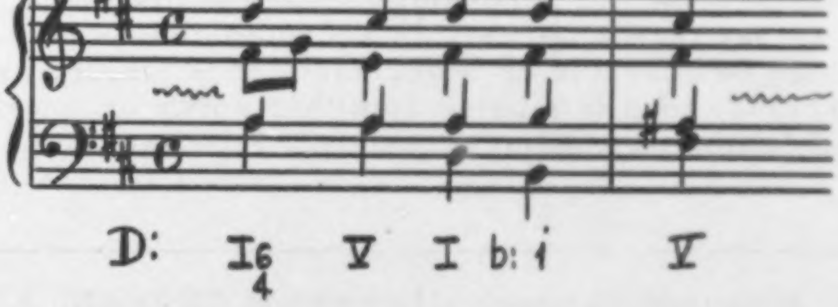
6. Modulation

Three general types of modulation are explained:

a. Direct Modulation. A phrase ending in one key followed by another phrase beginning in a different key.

No common chord is shown in the analysis.

(AH, page 2 - Fig. 1.1.)[1]



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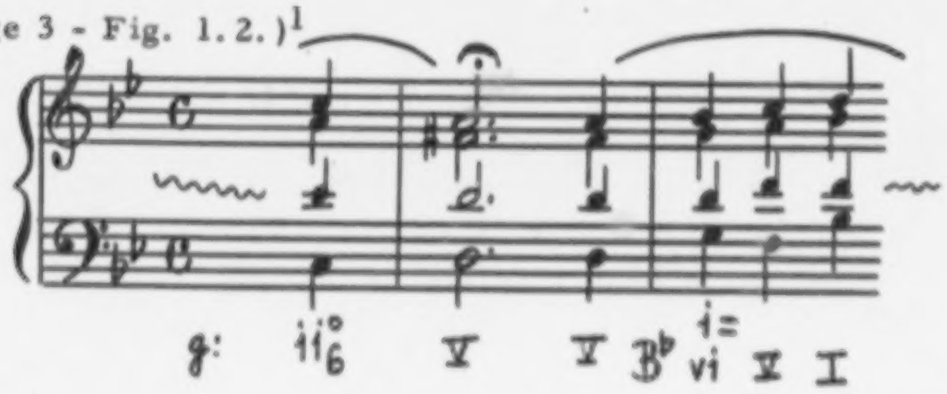
[1] Robert W. Ottman, Advanced Harmony (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961). Used by permission.

OTTMAN (E, AH)

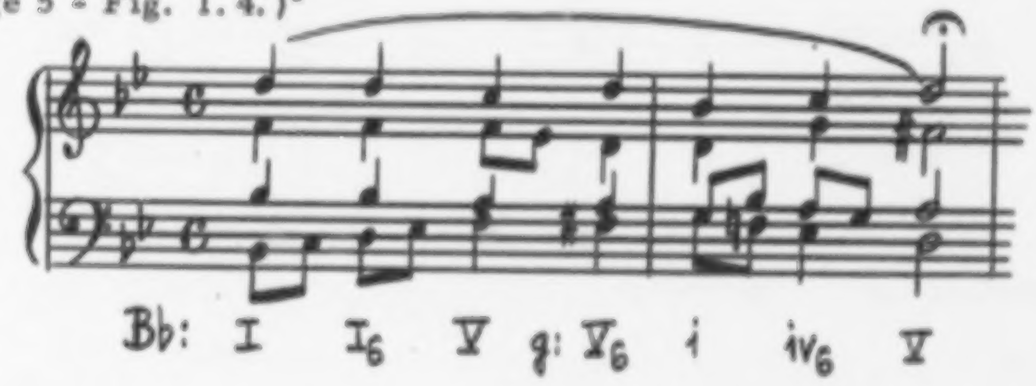
b. Common Chord Modulation. A pivot chord is interpreted in two keys. This chord, followed by the equal sign (=), is also analyzed in the new key.

(AH, page 3 - Fig. 1. 2.)[1]



c. Internal Direct Modulation. This is sometimes called chromatic modulation since it occurs within the phrase, without a pivot chord, and one of the parts moves a chromatic half step.

(AH, page 5 - Fig. 1. 4.)[1]



While enharmonic modulation is discussed at length, its symbolization is still a variation of the common chord or internal direct modulation, i. e., a chord receives two interpretations.

C. Nonharmonic tones

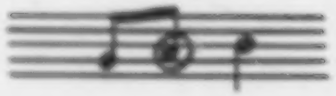
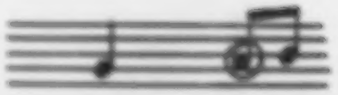
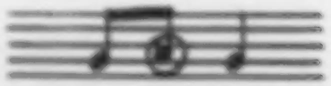
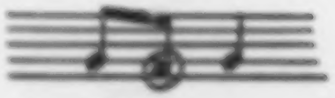
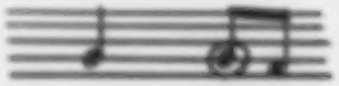
All nonharmonic tones are defined according to how the dissonant tone is approached and left, rather than whether it is accented or unaccented. While the passing tone may be accented or unaccented, it is labeled as one or the other. The neighboring tone is labeled as either upper or lower. The suspension and retardation may utilize a tied or a repeated note.

---

[1] Robert W. Ottman, Advanced Harmony (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1961). Used by permission.

OTTMAN (E, AH)

C. Nonharmonic tones
(EH, page 132 - Table 3)[1]

Name	Abbreviation	Example	Approached	Left	Direction of Resolution
Passing tone, unaccented	UPT		By step	By step	Same as approach
Passing tone, accented	APT		By step	By step	Same as approach
Neighboring tone, upper	UN		By step	By step	Opposite to approach
Neighboring tone, lower	LN		By step	By step	Opposite to approach
Suspension	S		Same note	By step	Down

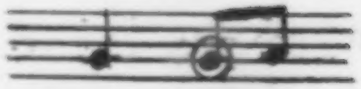
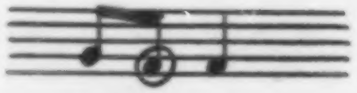
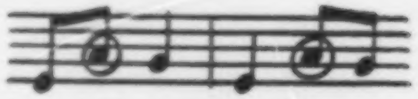
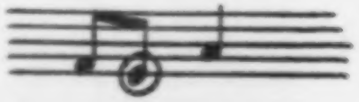
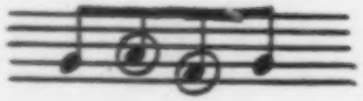
---

[1] Robert W. Ottman, Elementary Harmony (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1961). Used by permission.

OTTMAN (E, AH)

C. Nonharmonic tones (cont.)

(EH, page 132 - Table 3)[1]

Name	Abbreviation	Example	Approached	Left	Direction of Resolution
Retardation	R		Same note	By step	Up
Anticipation	A		By step	Same note	Same note
Appoggiatura	App		By skip	By step	Opposite to skip
Escape Tone	ET		By step	By skip	Opposite to approach
Changing tones	CT		By step-skip-step		Returns to note of approach
Pedal	P		Held note		

---

[1] Robert W. Ottman, Elementary Harmony (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961). Used by permission.

PERSICHETTI (TCH)

Special Area Book

Some books emphasize a particular aspect of music theory, and the format used to categorize the symbolization in conventional theory texts does not always apply. Persichetti's book concerns harmonic devices in contemporary music; examples are usually given in staff notation and very little use is made of analytic symbols.

A. Figured bass

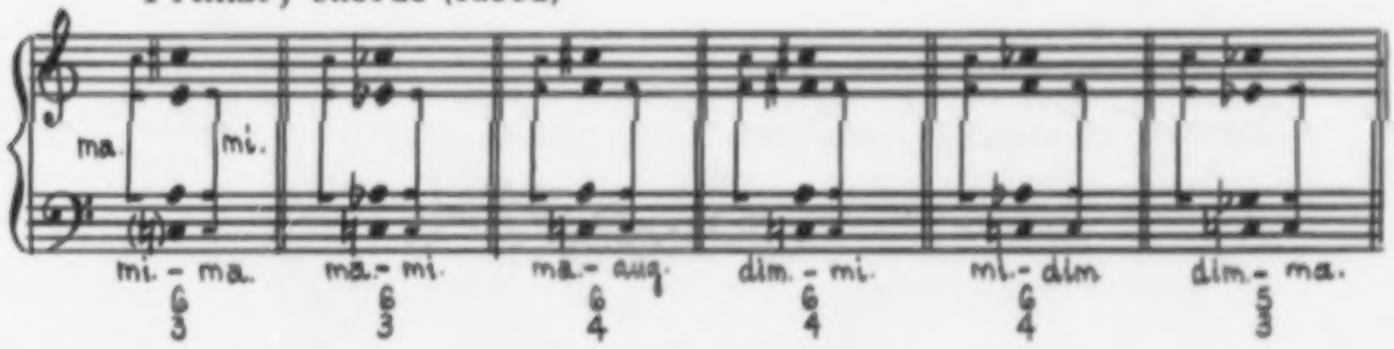
There are isolated cases of the Arabic numerals from figured bass being used alone and combined with Roman numeral chord symbols.

1. Triads and inversions

In discussing "compound construction" the usual figures describe inversions of superimposed triads.

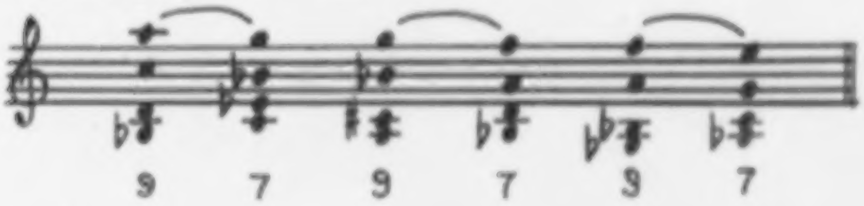
(TCH, page 171 - Ex. 8-14)[1]

Primary chords (fused)



2. Seventh (ninth, etc.) chords and inversions

(TCH, page 80 - Ex. 3-30)[1]



Persichetti discusses 7th, 9th, 11th and 13th chords but usually symbolizes them as G13 (see B. 7 below) rather than with figured bass intervals only. He also lists 15th, 17th, 19th, 21st and 23rd chords. These larger chords are possible when the seven-tone scale is expanded to contain other notes. He says: "In tertian chords larger than the seventeenth, not every tone is necessarily different; the size of the chord is determined by the distance between the root and the highest new note that rises in thirds above the root." (page 86)[1]

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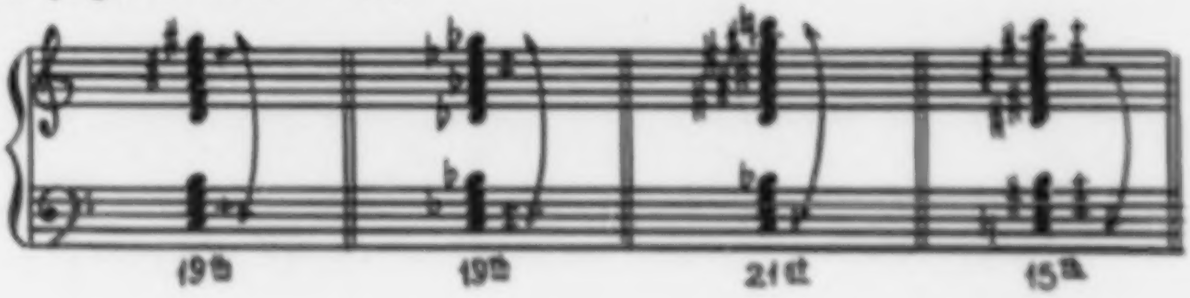
[1] Vincent Persichetti, Twentieth-Century Harmony (New York: W. W. Norton & Co., Inc., 1961). Used by permission.

(TCH, page 86 - Ex. 3-41)[1]



3. Altered tones

There are few cases where he indicates altered tones in figures; when it is done the accidental follows the figure, and special signs, such as the slanting stroke (6̸), are not used.

Example:: $\mathrm{VI}\begin{smallmatrix}6\sharp\\4\\3\end{smallmatrix}$

4. Nonharmonic tones

These are not symbolized in terms of figured bass.

B. Chord symbols

1. Key indication

The tonal center is indicated, but no distinction is made between major and minor (or other) scales.

C center:

2. The Roman numeral chord symbol (triads)

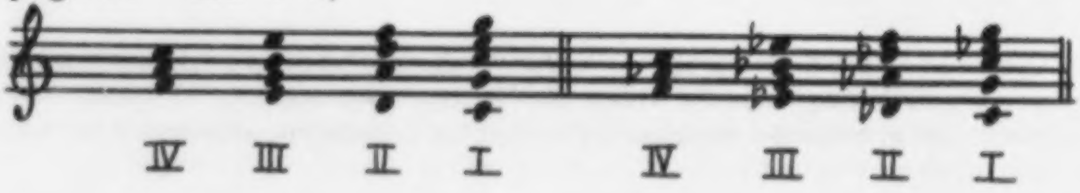
The Roman numerals have only limited use in the early part of the book. Large Roman numerals are used for all chord types; they indicate the scale degree upon which the chord is built, but alterations are not shown.

---

[1] Vincent Persichetti, Twentieth-Century Harmony (New York: W. W. Norton & Co., Inc., 1961). Used by permission.

PERSICHETTI (TCH) SAB

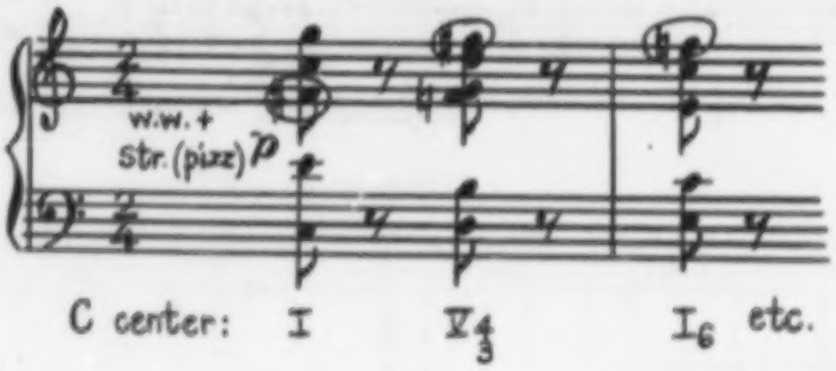
(TCH, page 68 - Ex. 3-4)[1]


IV
III
II
I
IV
III
II
I

3. Inversions

The combination of figured bass Arabic numerals and Roman numerals to show chord inversion is extremely rare. In illustrating "added-note chords" he has the following example:

(TCH, page 116 - Ex. 5-13)[1]


w.w. +
str. (pizz) p
C center:
I
V4
3
I6
etc.

4. Seventh (ninth, etc.) chords

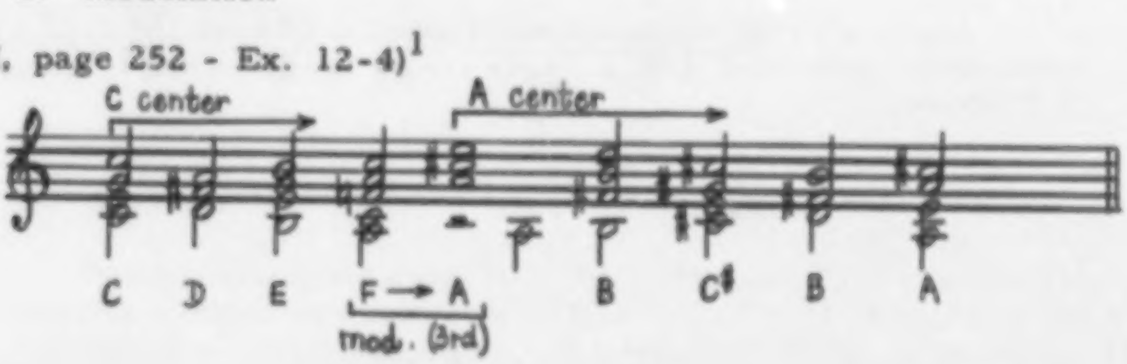
Not symbolized with Roman numerals.

5. Altered tones

Not symbolized with Roman numerals.

6. Modulation

(TCH, page 252 - Ex. 12-4)[1]


C center
A center
C
D
E
F → A
mod. (3rd)
B
C♯
B
A

---

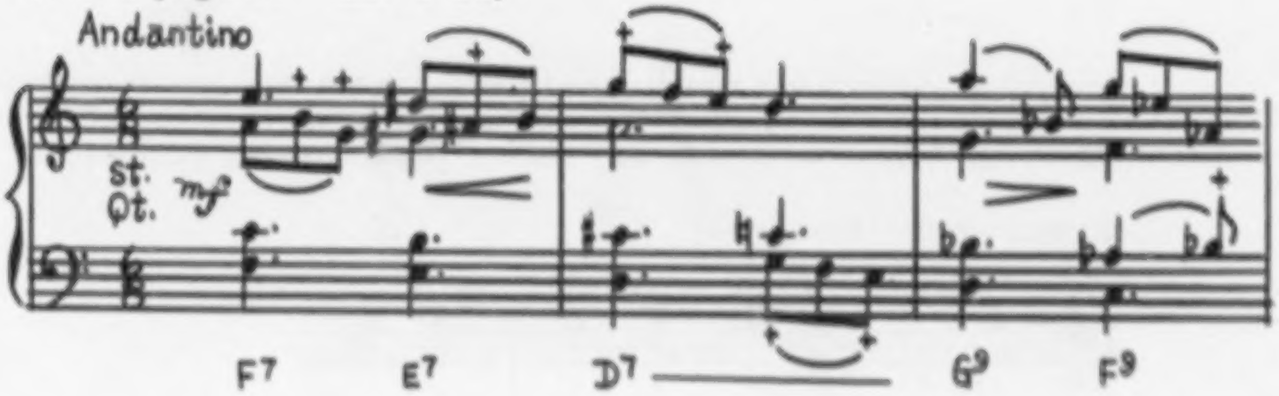
[1] Vincent Persichetti, Twentieth-Century Harmony (New York: W. W. Norton & Co., Inc., 1961). Used by permission.

PERSICHETTI (TCH) SAB

7. Other chord symbols

Persichetti frequently uses chord symbols like those used in jazz, rather than the Roman numeral. These usually show the chord root; no attempt is made to show the actual chord type.

(TCH, page 83 - Ex. 3-35)[1]



C. Nonharmonic tones

Persichetti defines ornamental nonharmonic tones according to how they are approached and left (passing tones, auxiliary tones, changing tones, and appoggiaturas) and a hybrid group which are "formed by the rhythmic misplacement of chord tones," i. e., suspensions and anticipations (page 231).[1] Also, he says it is possible to skip to and from a nonharmonic tone, "(a) if that tone becomes a member of the following chord; (b) while implying a larger formation over the same root; and (c) while resisting any chordal affiliation" (page 232).[1]

Also note that nonharmonic tones, whatever the type are sometimes indicated with a cross (+) as in the example given under B. 7 above.

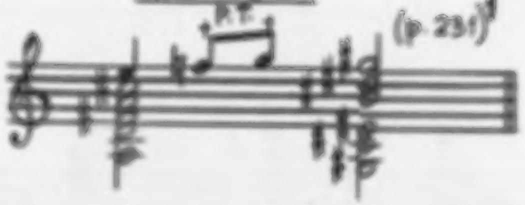
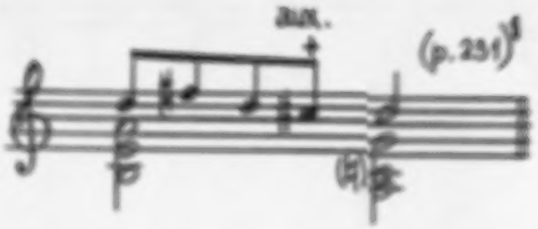
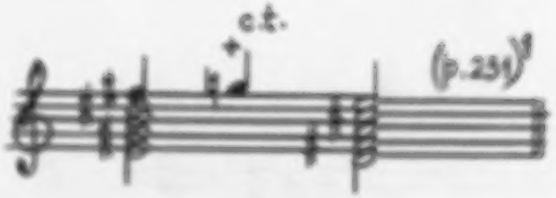
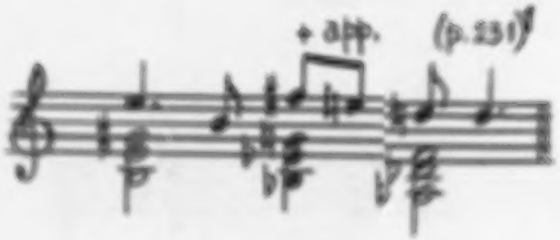
---

[1] Vincent Persichetti, Twentieth-Century Harmony (New York: W. W. Norton & Co., Inc., 1961). Used by permission.

PERSICHETTI (TCH) SAB

C. Nonharmonic tones

(TCH, page 231 - Ex. 11-2, 11-3)[1]

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
passing tone	p. t.		By step	By step	Same as approach
auxiliary	aux.		By step	By step	Opposite to approach
changing tone	c. t.		By step	By skip	
appoggiatura	app.		By skip	By step	

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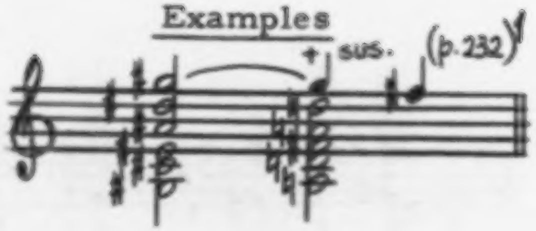
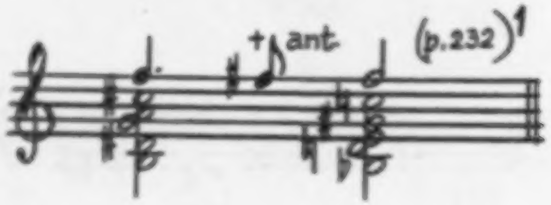
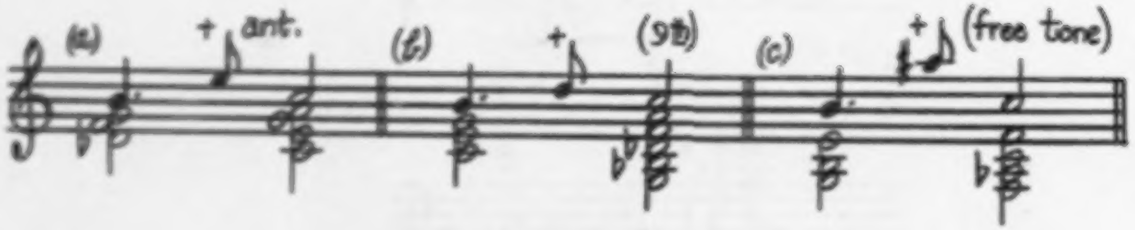
[1] Vincent Persichetti, Twentieth-Century Harmony (New York: W. W. Norton & Co., Inc., 1961). Used by permission.

PERSICHETTI (TCH) SAB

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
suspension	sus.		By same note	By step	
anticipation	ant.		By step or skip	By same note	

(TCH, page 232 - Ex. 11-5)[1]



(a)
+ ant.
(b)
+
(9b)
(c)
+
(free tone)

---

[1] Vincent Persichetti, Twentieth-Century Harmony (New York: W. W. Norton & Co., Inc., 1961). Used by permission.

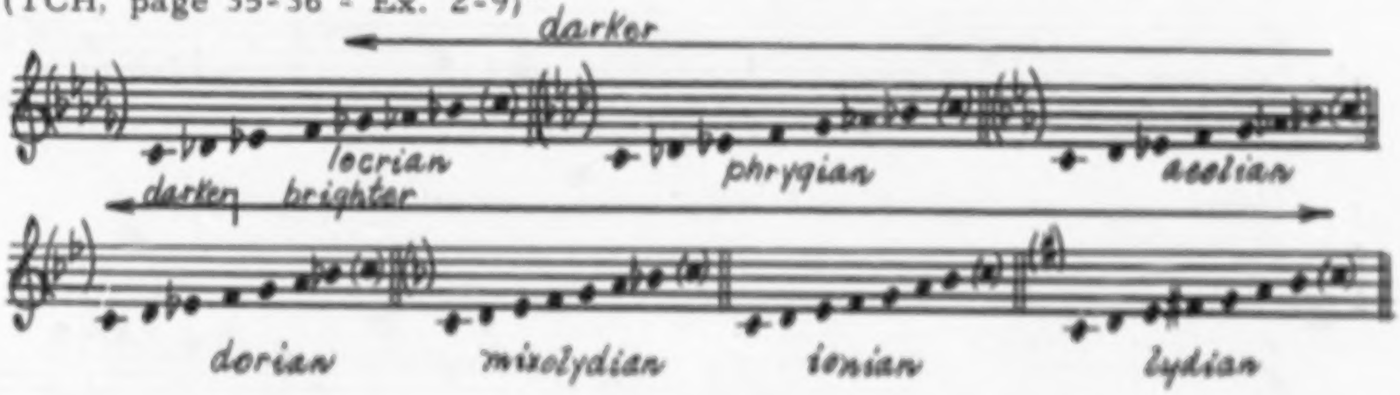
PERSICHETTI (TCH) SAB

D. Special terminology

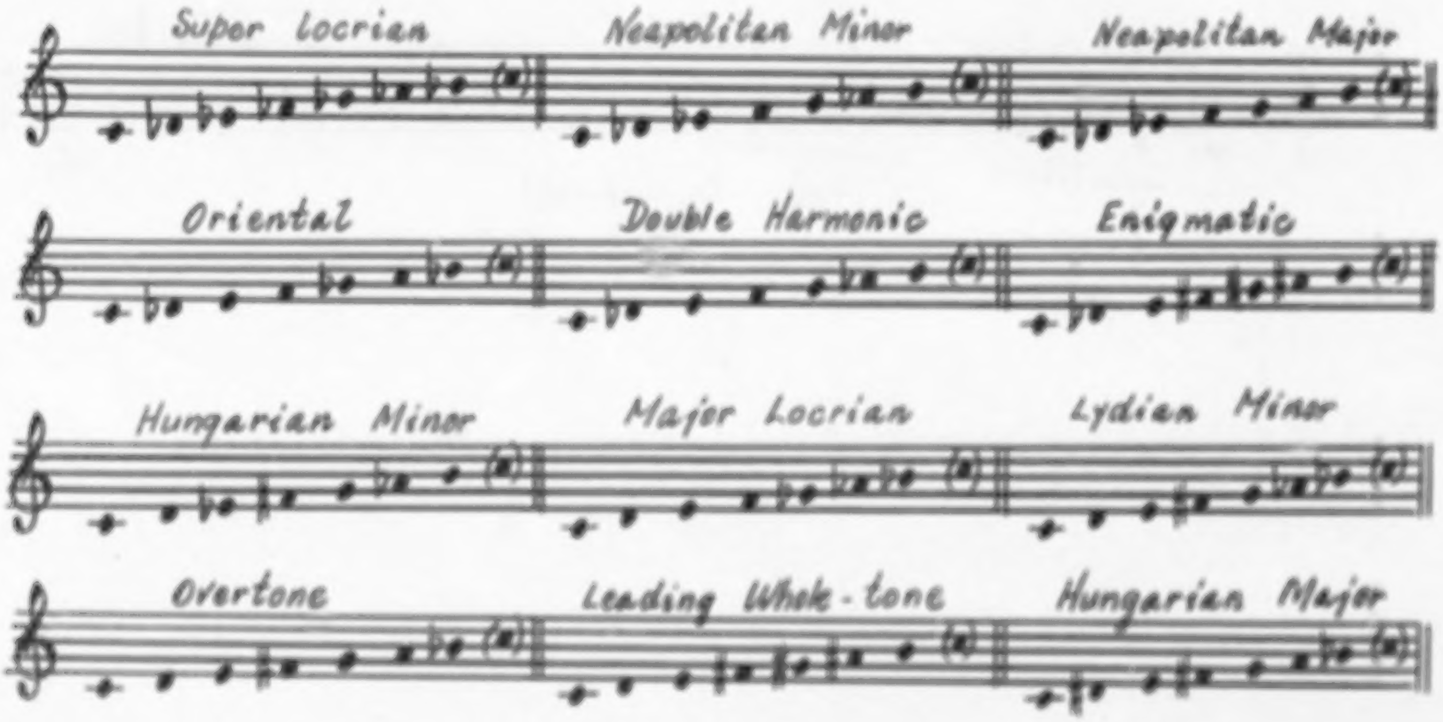
Persichetti has evolved some descriptive names for certain kinds or scales which are not in general use. In addition to the tradional names for modal scales which he uses, he also uses what he calls "synthetic scale formations." These are listed below with the names which he has assigned to them.

The tradional modes he has arranged from "darker" to "brighter".

(TCH, page 35-36 - Ex. 2-9)[1]


darker
locrian
phrygian
aeolian
darker brighter
dorian
mixolydian
ionian
lydian

(TCH, page 44 - Ex. 2-21)[1] Synthetic (seven-tone) scales


Super Locrian
Neapolitan Minor
Neapolitan Major
Oriental
Double Harmonic
Enigmatic
Hungarian Minor
Major Locrian
Lydian Minor
Overtone
Leading Whole-tone
Hungarian Major

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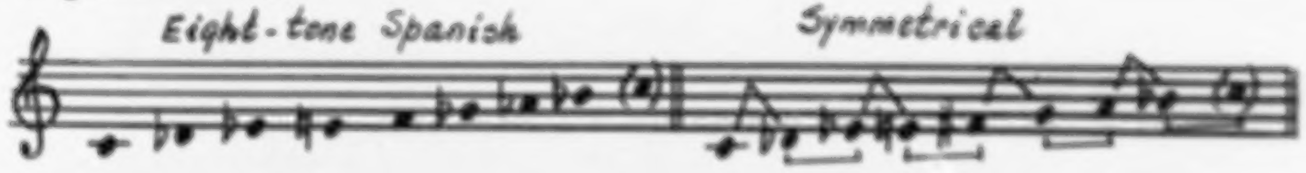
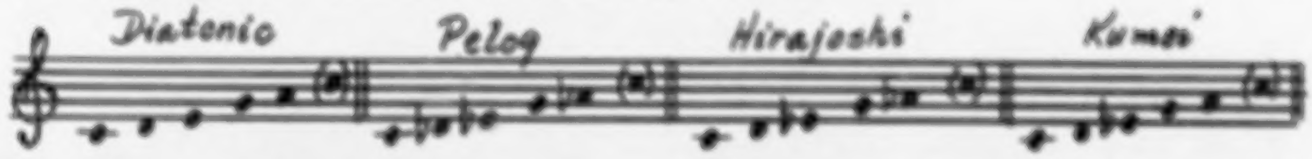
[1] Vincent Persichetti, Twentieth-Century Harmony, (New York: W. W. Norton & Co., Inc., 1961). Used by permission.

PERSICHETTI (TCH) SAB

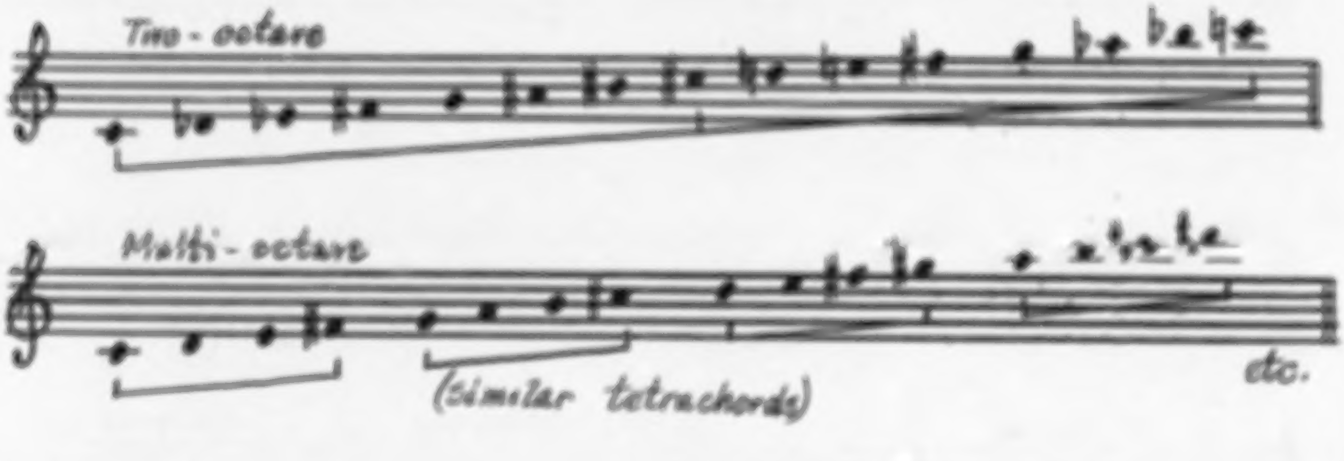
Eight-tone scales


Eight-tone Spanish
Symmetrical

(TCH, page 50 - Ex. 2-32) Pentatonic scales


Diatonic
Pelog
Hirajoshi
Kumoi

(TCH, page 48 - Ex. 2-29)[1] Two-octave and Multi-octave scales


Two-octave
Multi-octave
(Similar tetrachords)
etc.

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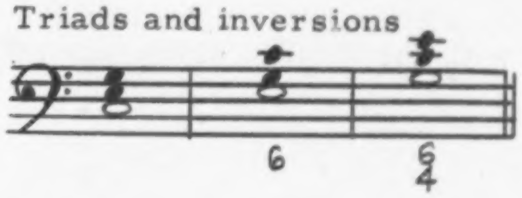
[1] Vincent Persichetti, Twentieth-Century Harmony (New York: W. W. Norton & Co., Inc., 1961). Used by permission.

PISTON (H)

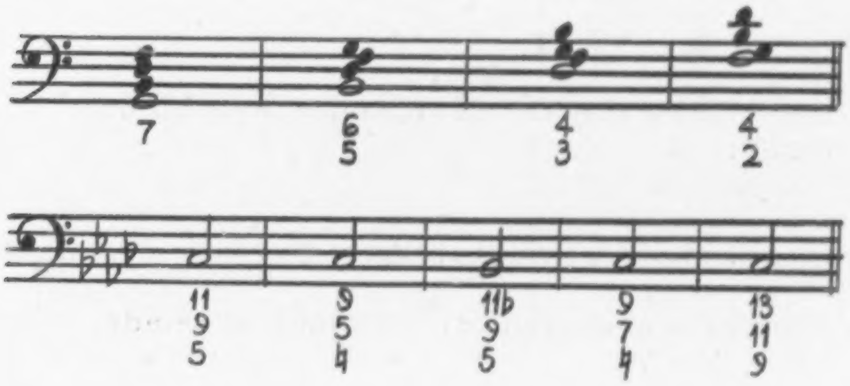
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions

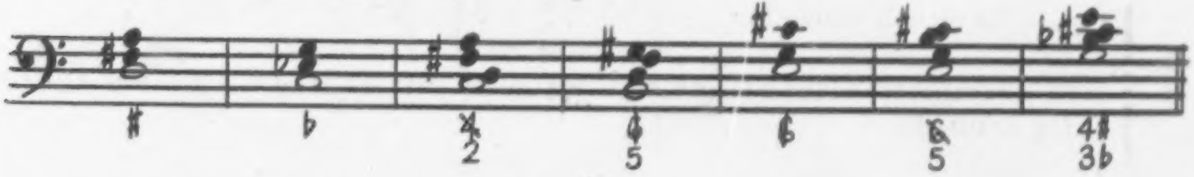


2. Seventh (ninth, etc.) chords and inversions


7
6 5
4 3
4 2
11 9 5
9 5 4
11♭ 9 5
9 7 4
13 11 9

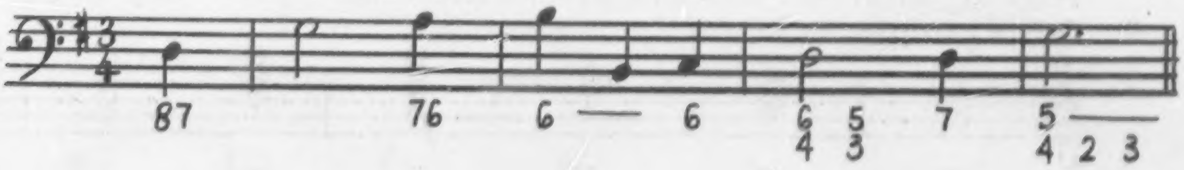
3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals follow the figures affected.
   c. The vertical (6̸) and slanting strokes (6̸) indicate that a tone is raised a chromatic half-step.



4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. A dash indicates that a tone is held or repeated.


87
76
6 —
6
6 4
5 3
7
5 4 —
2
3

B. Chord symbols

Apparently Piston's purpose is to keep chord symbolization as simple as possible. Roman numerals are used to denote a chord root (function) but they frequently do not show chromatic alterations in the chord. Generally the Roman numeral is combined with the Arabic numerals from figured bass to show chord inversions.

1. Key indication

a. Large (capital) letters, followed by a colon, are used to indicate both major and minor keys.

A: I V I
E♭ : II V I

b. Some exercises show the key designation written out.

A minor: I V I
E♭ major: II V I

2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.

I II V VI

3. Inversions

The Arabic figures from figured bass are placed above and to the right of the Roman numeral.

I^{6} II^{6}_{5} V^{4}_{3} VII^{6}

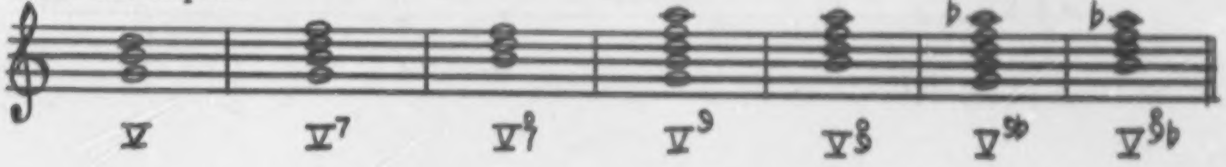
4. Seventh (ninth, etc.) chords

a. Seventh chords: V^{7} V^{6}_{5} V^{4}_{3} V^{4}_{2}

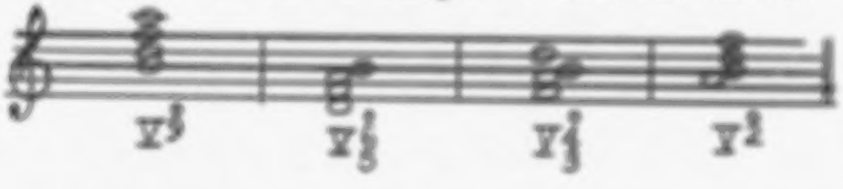
(Chromatic alterations are usually not shown by these Arabic figures.)

b. The seventh chord on the leading tone:

Roman numeral VII is used in triadic harmony; after the dominant seventh and ninth chords are explained the leading tone triad is called V^{0}_{7}, and the diminished seventh chord on VII is symbolized as V^{0}_{9}. VII continues to be used for the major triad on the natural seventh degree in the minor key. Accidentals showing altered tones are placed after the figure they affect. For example:



c. Inversions of the leading tone seventh chord:


V9
V9 6/5
V9 4/3
V9 2

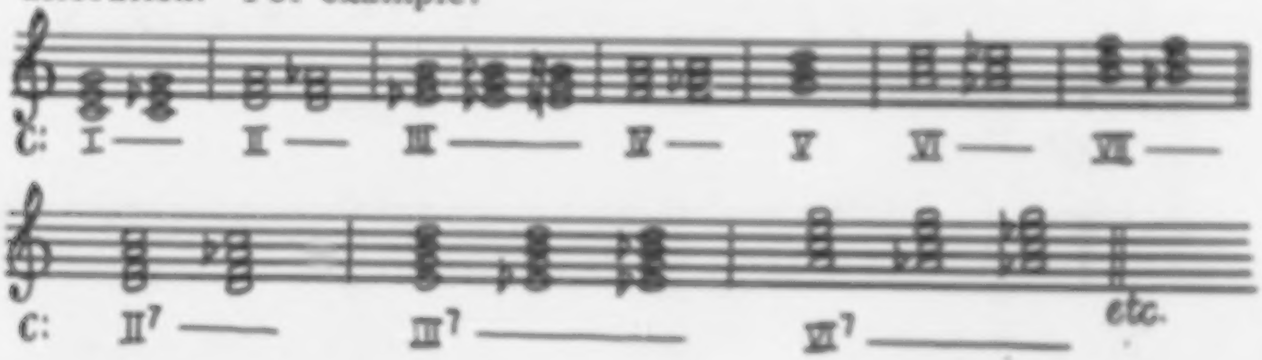
d. Ninth, eleventh and thirteenth chords:

$II^9 \quad I^{11} \quad V^{13}$

I^{11} may also be symbolized as V/I - i.e., "five over one." Note: this symbolization (V/I) in Piston's book does not mean "five of one."

5. Altered tones

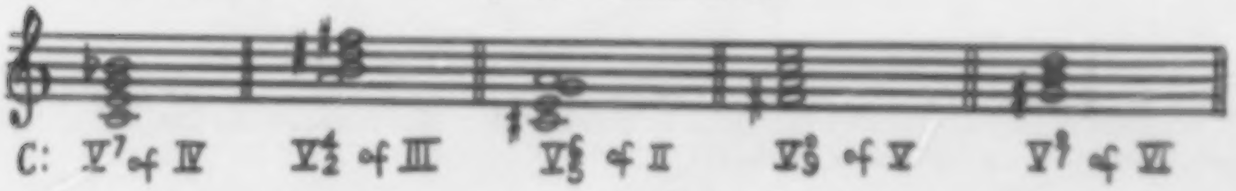
a. Modal variants (that is, major, minor, augmented and diminished triads and certain seventh chords, which are made from the tones of a major key and its tonic minor) are not considered to be altered chords. The simple Roman numeral designation of the triad or seventh chord shows no chromatic alteration. For example:


C: I —— II —— III —— IV —— V VI —— VII ——
C: II7 —— III7 —— VI7 ——
etc.

However, the following functions are considered to be altered chords and they require a special symbolization.

b. Secondary dominants:

Included in this category are also leading tone chords which are considered "incomplete dominants."


C: V7 of IV
V4/2 of III
V6/5 of II
V9 of V
V9 of VI

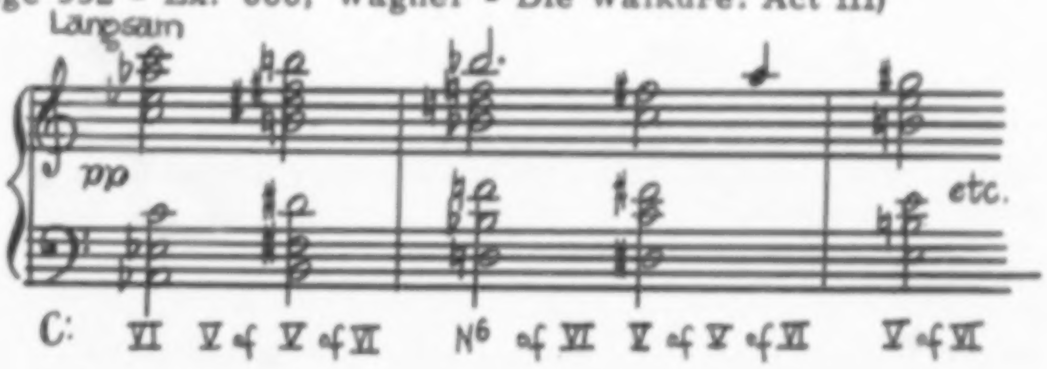
PISTON (H)

By extension the secondary dominant principle is also made to serve for other chord functions, such as:

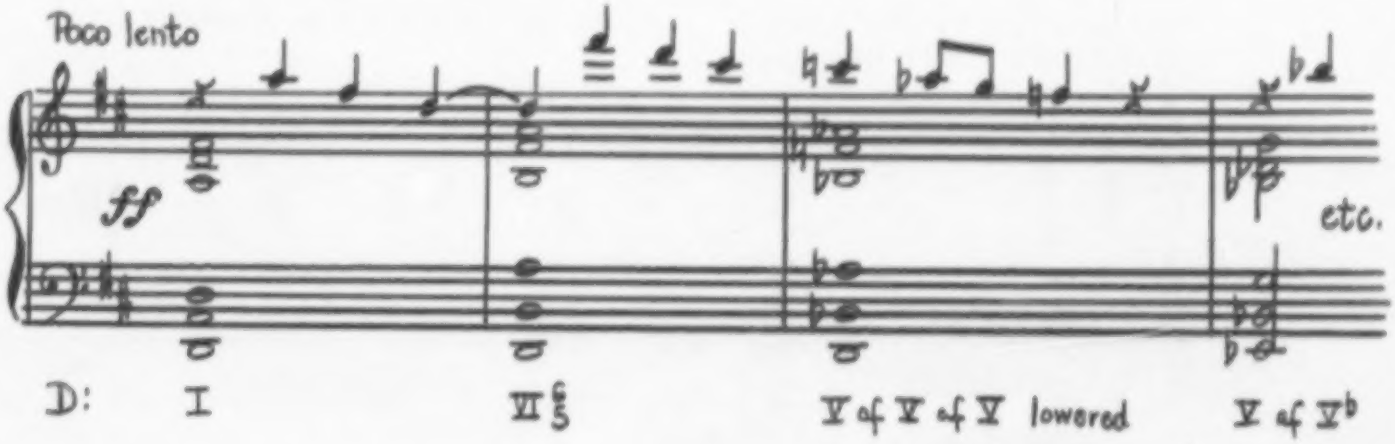
IV of IV IV^6 of II   IV of V II^6_5 of III, etc.

The final step in this extension results in symbols like the following used to explain the chromatic harmony of composers like Wagner and Franck.

(H, page 332 - Ex. 666, Wagner - Die Walküre: Act III)[1]


Langsam
pp
etc.
C: VI V of V of VI N6 of VI V of V of VI V of VI

(H, page 334 - Ex. 669, Franck - String Quartet)[1]

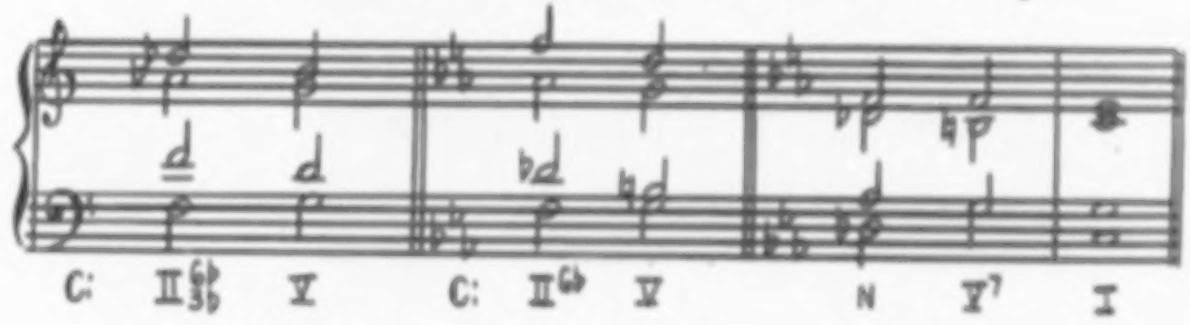

Poco lento
ff
etc.
D: I VI 6 5 V of V of V lowered V of V♭

---

[1] Walter Piston, Harmony (New York: W. W. Norton & Co., Inc., 1962). 3rd edition. Used by permission.

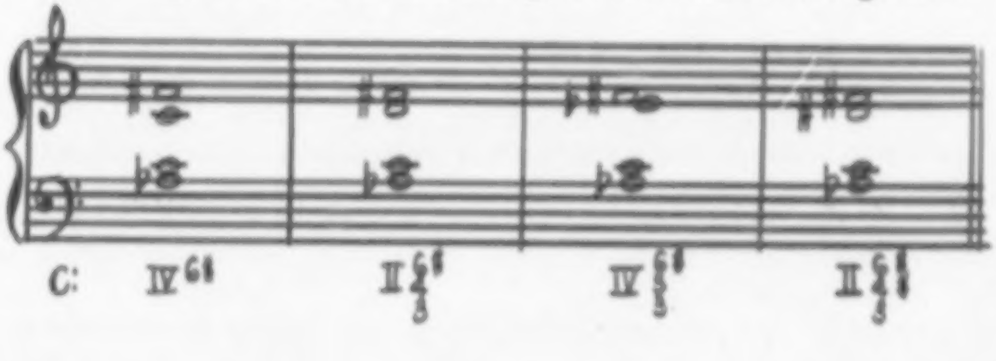
c. The Neapolitan sixth chord:

This is symbolized as $II^{6\flat}_{3\flat}$, or also as N, N^6 or N^6_4.


C: II6♭ 3♭ V
C: II6♭ V
N V7 I

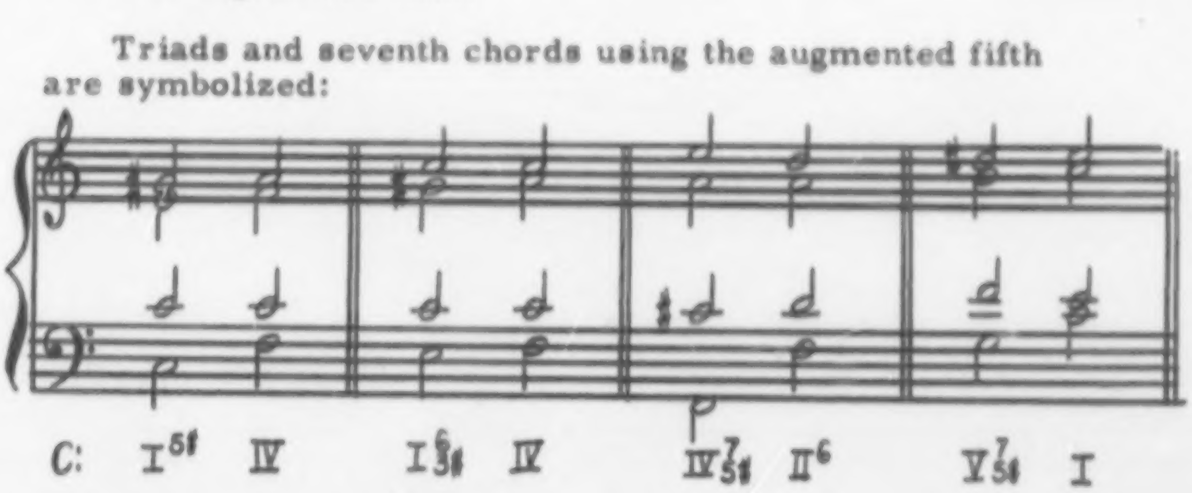
d. The augmented sixth chords:

While the names Italian, French and German are given in the text, the usual symbolization for the augmented sixth chords is by means of the figured bass intervals. Two spellings of the German augmented sixth are given.


C: IV6♯
II6♯ 4 3
IV6♯ 5
II6♯ 4♯ 3

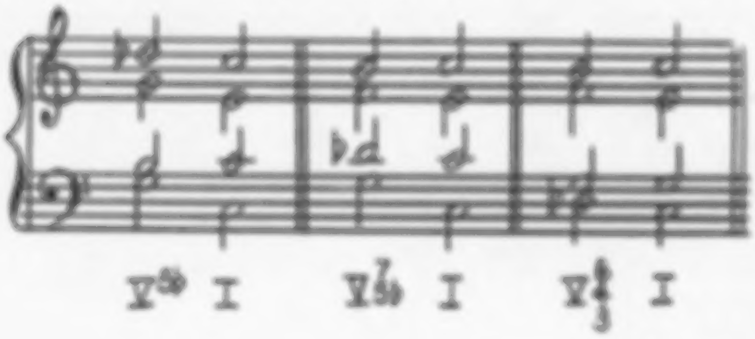
e. The augmented fifth:

Triads and seventh chords using the augmented fifth are symbolized:


C: I5♯ IV
I6 3♯ IV
IV7 5♯ II6
V7 5♯ I

f. The diminished fifth:

The examples given are found in the dominant harmony; they produce the same sonority as augmented sixth chords.



6. Modulation

Modulation is explained by pivot chord only. It is symbolized:

$$\text{C: IV II V} \begin{cases} \text{C: I} \\ \text{G: IV II V I} \end{cases}$$

Abrupt or enharmonic modulations similarly require a dual interpretation of the pivot chord.

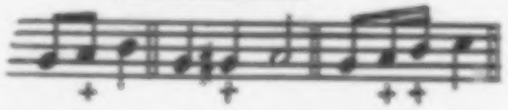
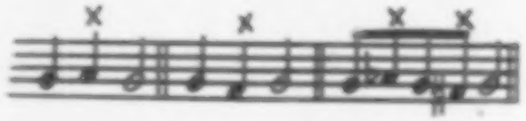
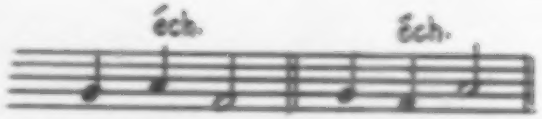
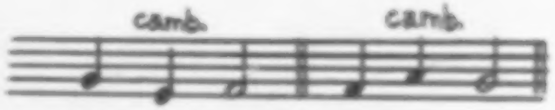
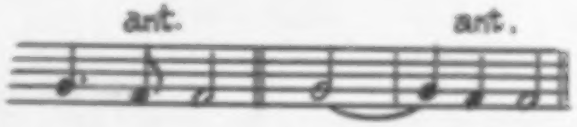
C. Nonharmonic tones

Piston uniquely defines the appoggiatura on the basis of rhythmic accent. This interpretation makes two factors necessary in defining a non-chord tone, i.e., (1) whether it is accented or unaccented and (2) how it is approached and left.

PISTON (H)

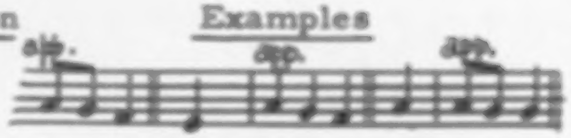
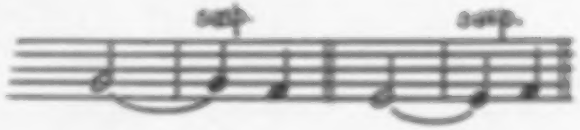
C. Nonharmonic tones

1. Nonharmonic tones which occur in a weak rhythmic position, i. e., dissonant tones which occur on an unaccented beat or part of a beat.

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing tone	p. t.		By step	By step	Same as approach
Auxiliary tone	aux.		By step	By step	Opposite to approach
Échappée	éch.		By step	By skip	Opposite to approach
Cambiata	camb.		By skip	By step	Opposite to approach
Anticipation	ant.				

C. Nonharmonic tones (cont.)

2. Nonharmonic tones which occur in a strong rhythmic position, i.e., dissonant tones which occur on an accented beat or part of a beat.

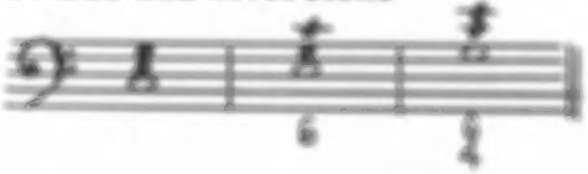
Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Appoggiatura	app.		Initial note By skip Repeated note By step	By step	Up or down
Suspension	susp.		By tied note	By step	Up or down
Pedal	ped.		A tone held in one voice through several changes of harmony. Should at some time be dissonant, but customarily begins and ends as a chord member.		

RATNER (H)

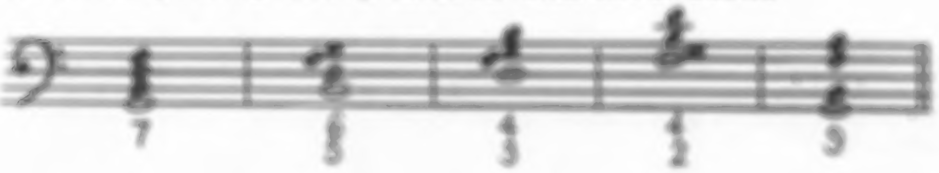
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions



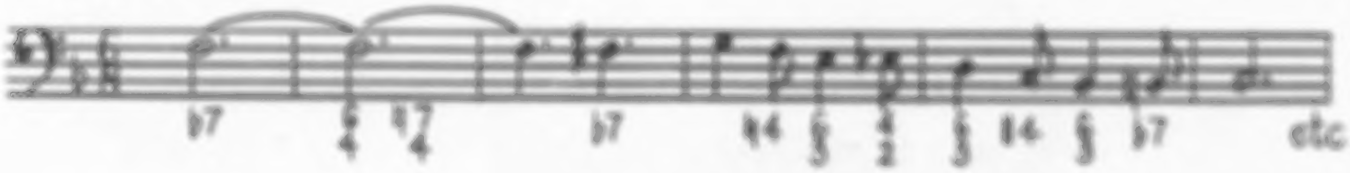
2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

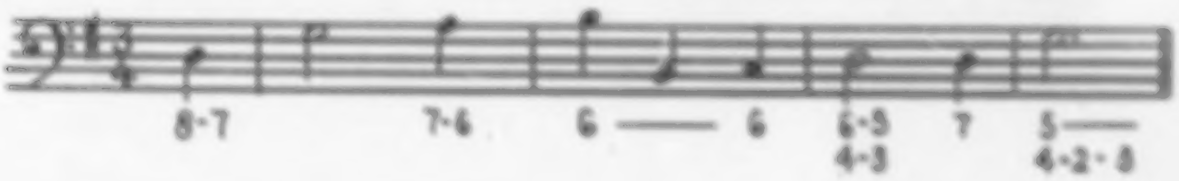
   a. Accidentals precede the figures affected.
   b. Accidentals without figures are not used.
   c. The slanting stroke (6̸) is not used.

(H, page 216, 2.)[1]



4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. A short dash between two figures indicates the melodic motion takes place in the same voice.
   c. A long dash indicates that a tone is held or repeated.



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[1] Leonard G. Ratner, Harmony Structure and Style (New York: McGraw-Hill Book Co., Inc., 1962). Used by permission.

B. Chord symbols

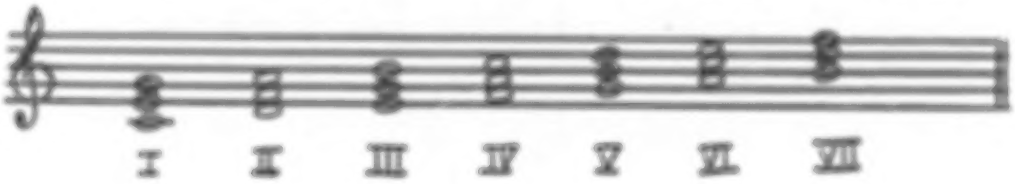
1. Key indication

a. A capital letter indicates a major key.
C B♭ F♯

b. A small letter indicates a minor key.
c b♭ f♯

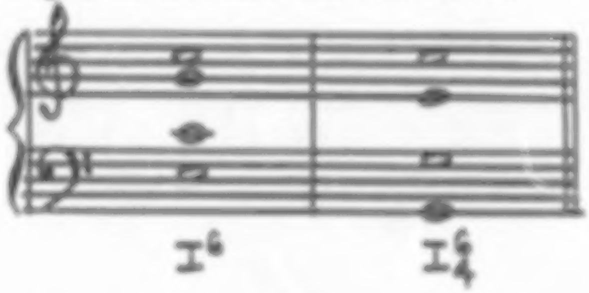
2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.

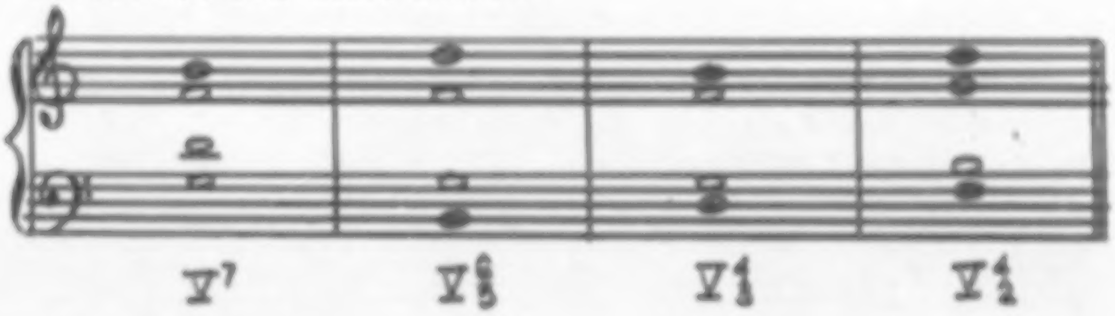


3. Inversions

The Arabic numerals from figured bass are combined with the Roman numeral to indicate inversion. A single figure is placed to the upper right of the Roman numeral; if two or more figures are used they are placed to the right of the Roman numeral.

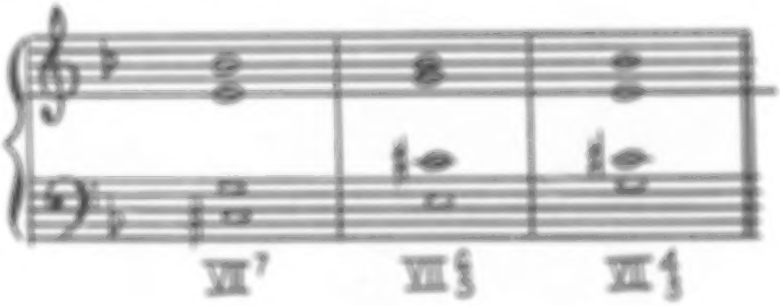


4. Seventh (ninth, etc.) chords

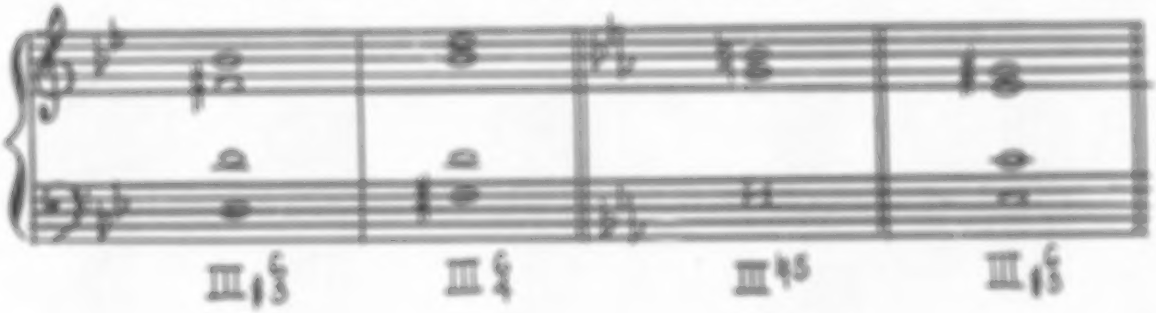


5. Altered tones

The unaltered Roman numeral is sometimes also used to symbolize an altered chord. However, in general, Ratner prefers to show alterations by means of the figured bass numerals. These numerals are usually preceded by the necessary accidental, but this is not followed out consistently. For example, the leading tone diminished seventh chord, in minor, is indicated:

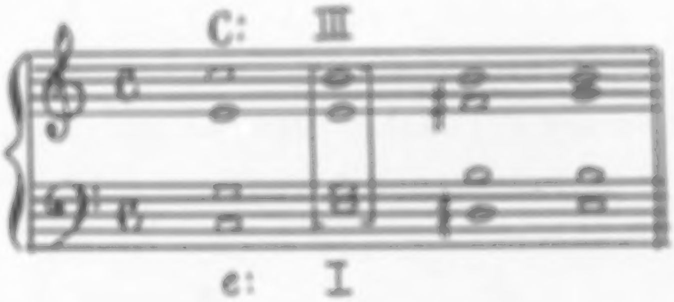


Note that the second chord here is not symbolized VII$^{\sharp 6}_{5}$, although this is the procedure followed below with the augmented triad. In the following examples the alteration is shown when it appears in an upper part but not when it is in the base. In all cases of alteration, Ratner uses the accidental necessary in each particular key.



6. Modulation

When a change of key takes place, the need of a cadential formula to establish the new key is emphasized. The pivot chord is symbolized as follows:



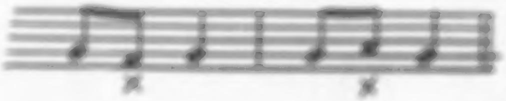
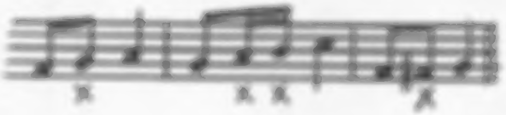
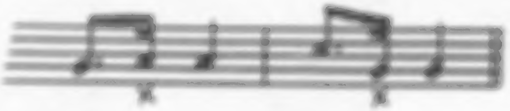
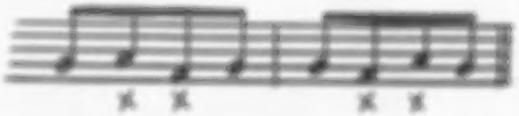
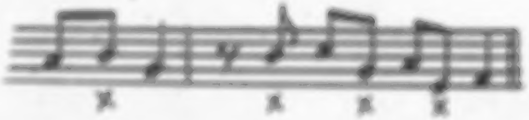
C. Nonharmonic tones

These are designated non-chord tones or tones of melodic figuration; they are grouped into unaccented and accented categories. The suspension is treated separately.

RATNER (H)

C. Nonharmonic tones

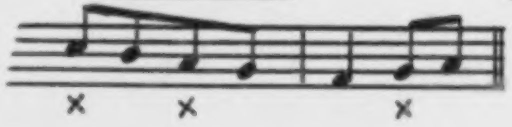
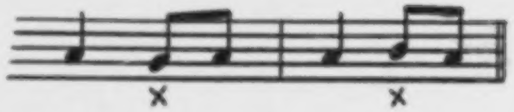
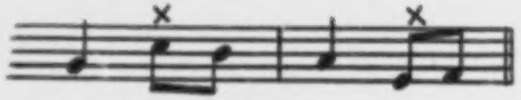
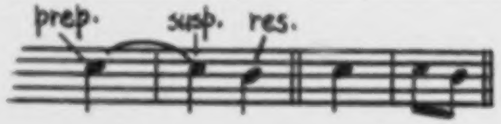
Unaccented Non-chord Tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Neighbor Tone	Abbreviations are not used - All non-chord tones are indicated by the x's.		By step	By step	Opposite to approach
Passing Tone			By step	By step	Same as approach
Anticipation			By step By skip	Repeated tone	Same note
Changing Tones			Step-skip-step		
Escape tone and reverse			By step By skip	By skip By step	Opposite to approach

RATNER (H)

C. Nonharmonic tones (cont.)

Accented Non-chord Tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Accented Passing Tone	- - - - None are used - - - - - - - - - -		By step	By step	Same as approach
Accented Neighbor Tone			By step	By step	Opposite to approach
Appoggiatura			By skip	By step	Opposite to approach
Suspension	prep. susp. res.		Same note (Tied or struck)	By step	Down (Occasionally up)
Pedal Point		Held Tone			

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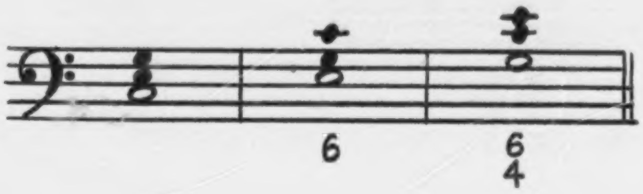
REED (BM)

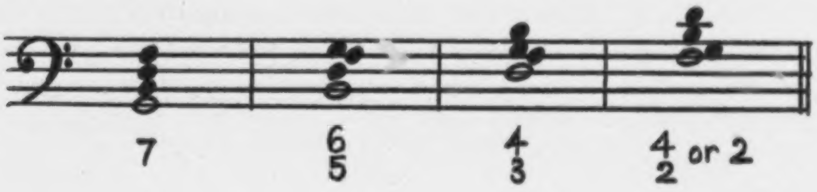
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions

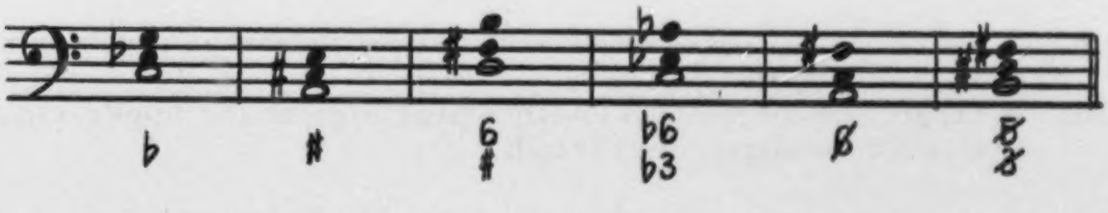


2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals precede the figures affected.
   c. The slanting stroke (6̸) indicates that a tone is raised a chromatic half-step.

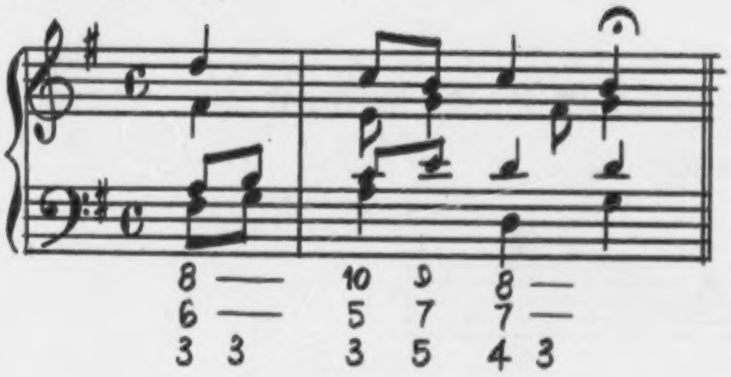


4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. A dash indicates that a tone is held or repeated.

REED (BM)

(BM, page 92 - Ex. 80)[1]



B. Chord symbols

This book does not combine the Arabic numerals from figured bass with the Roman numeral, but keeps each system separate. However, the optional use of this possibility is indicated by the following footnote from page 92: "The figured bass symbol showing inversion may be combined with the Roman numeral analysis if that technique of analysis is desired, e.g., V^7; V^6_5; V^4_3; V^2."[1]

1. Key indication

   a. A capital letter followed by a colon indicates a major key.
      C: B♭: F♯:
   b. A small letter followed by a colon indicates a minor key.
      c: b♭: f♯:

2. The Roman numeral chord symbol (triads)

   The quality of each triad type is shown by the Roman numeral symbol as follows:

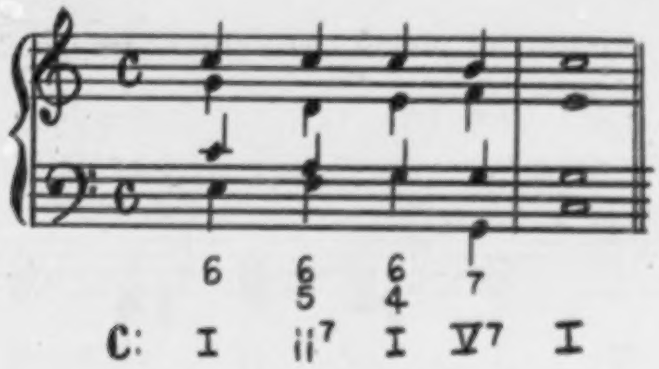
   a. A large Roman numeral indicates a major triad.
      I V
   b. A small (lower-case) Roman numeral indicates a minor triad.
      ii iii
   c. A large Roman numeral with a plus sign at the upper right indicates an augmented triad.
      III^+
   d. A small Roman numeral with a circle at the upper right indicates a diminished triad.
      vii^o

---

[1] H. Owen Reed, Basic Music (New York: Mills Music, Inc., 1954). Used by permission.

3. Inversions

The Roman numeral chord symbol does not show the chord inversion; this is indicated only by the figured bass which is kept separate from the chord symbol.



4. Seventh (ninth, etc.) chords

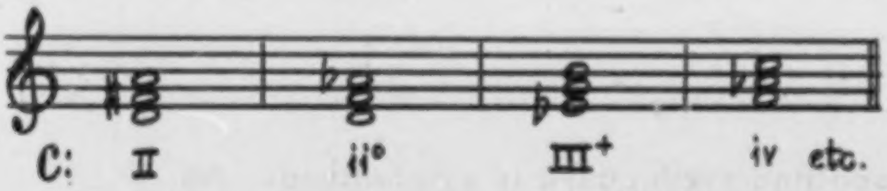
a. The addition of the diatonic seventh to the triad is shown by placing the numeral 7 directly to the right of the Roman numeral. II7 V7 ii 7 vii°7

b. No ninth, eleventh, etc. chords are dealt with, since the harmonic language of the book is derived from the Bach chorales.

5. Altered tones

The author discusses secondary dominants, borrowed chords, the Neapolitan sixth, and the chords of the augmented sixth.

The symbolization of altered triads is taken care of by the triadic symbols already discussed.



Additional symbols are required, however, for certain altered seventh chords.

a. Secondary dominants

While this author does not call the leading tone triad an "incomplete dominant" he says that "Goetschius . . . is not without justification, " (p. 111)[1] in this reasoning. Accordingly, he lists five chord types which may function as secondary dominants.

---

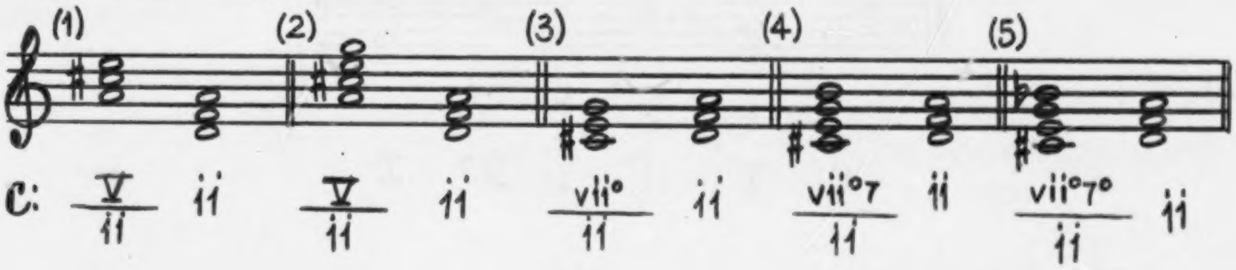
[1] H. Owen Reed, Basic Music (New York: Mills Music, Inc., 1954). Used by permission.

REED (BM)

V - major dominant triad
V7 - major-minor dominant seventh chord
vii° - diminished leading tone triad
vii°7 - diminished-minor leading tone seventh chord
vii°7° - diminished leading tone seventh chord

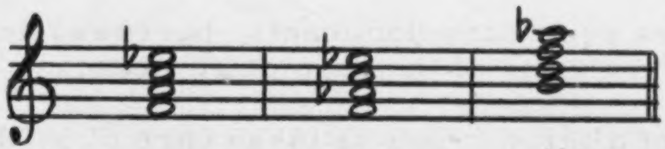
These symbols are placed above the symbol for the "secondary tonic" as follows:

(BM, page 113 - Ex. 100)[1]



b. Borrowed chords

Triads borrowed from the opposite mode (tonic major or minor key) are indicated as previously shown. If the seventh is altered, it is symbolized as below, the only exception being the symbol vii°7° for a diminished seventh chord when it is a secondary dominant as described above.



c. The Neapolitan sixth chord is symbolized: N6

d. The three tradional augmented,sixth chords are symbolized:

Italian	French	German
It. 6	F6	G6

---

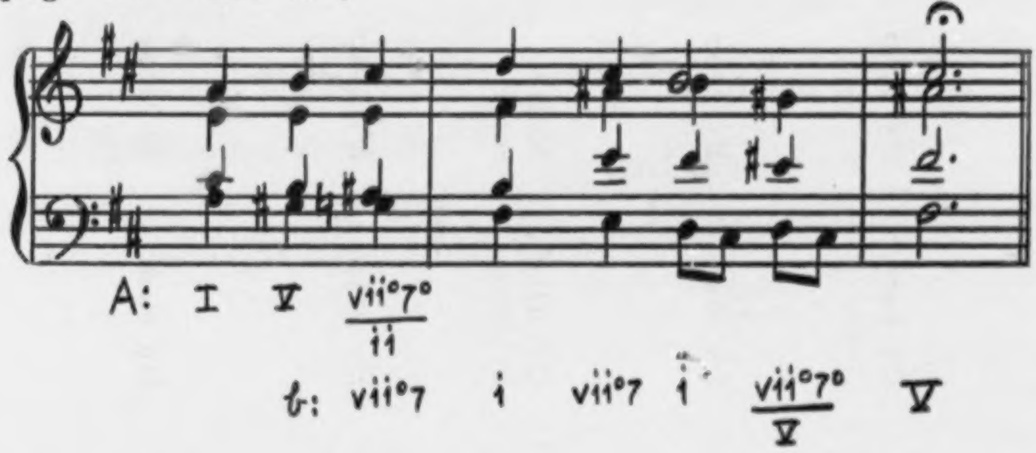
[1] H. Owen Reed, Basic Music (New York: Mills Music, Inc., 1954). Used by permission.

REED (BM)

6. Modulation

Reed lists the possibilities of diatonic, chromatic and enharmonic modulation. The symbolization for all types shows a dual interpretation for one or more chords.

(BM, page 137 - Ex. 118)[1]



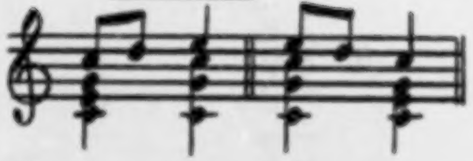
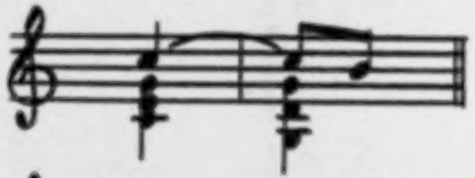
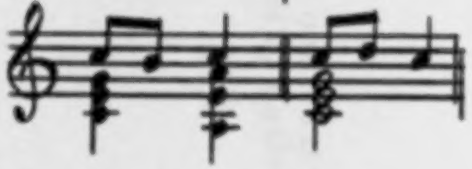
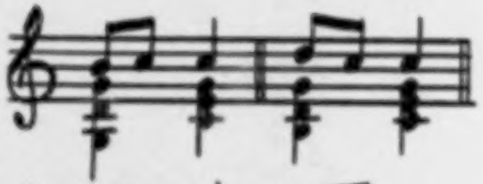
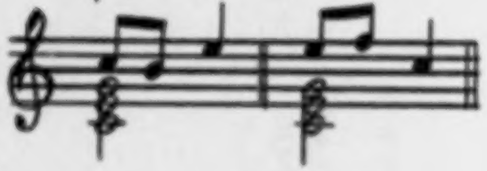
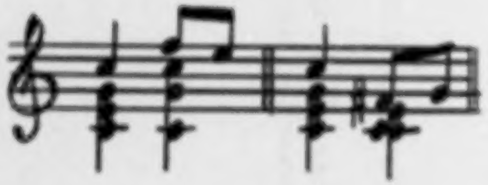
C. Nonharmonic tones

Nonharmonic tones in this book are classified according to how they are approached and left. They are presented in the following order:

---

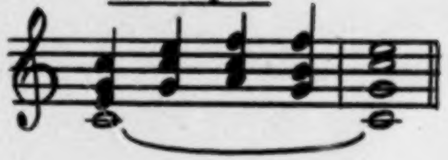
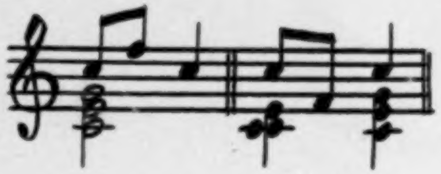
[1] H. Owen Reed, Basic Music (New York: Mills Music, Inc., 1954). Used by permission.

C. Nonharmonic tones

Name	Abbreviation	Example	Approached	Left	Direction of Resolution
Passing tone	PT		By step	By step	Same as approach
Suspension	S		By same tone	By step	Usually downward
Neighboring tone	NT		By step	By step	Opposite to approach
Anticipation	A		Usually by step	Same tone	Same tone
Escape tone	ET		By step	By skip	Usually opposite to approach
Appoggiatura	App.		By skip	By step	Usually opposite to approach

REED (BM)

C. Nonharmonic tones (cont.)

Name	Abbreviation	Example	Approached	Left	Direction of Resolution
Pedal Point	PP		Held tone		
Free tone	FT		By skip	By skip	Usually opposite to approach

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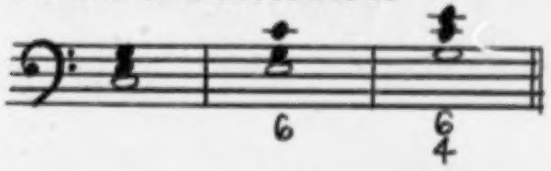
ROBINSON (PH)

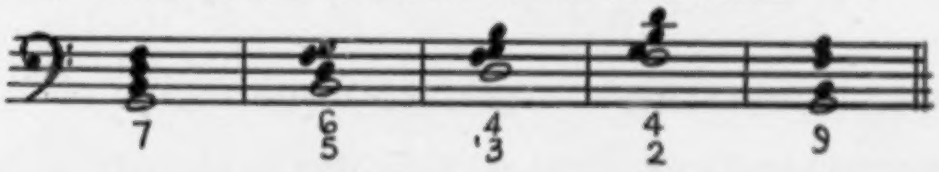
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions

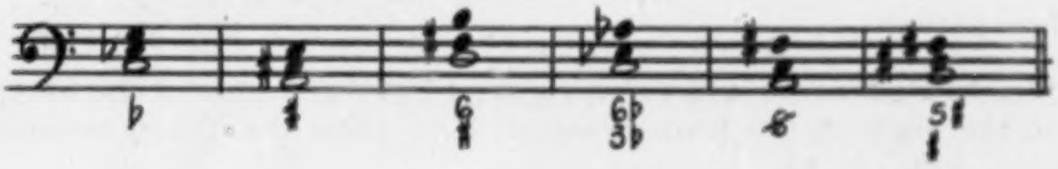


2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

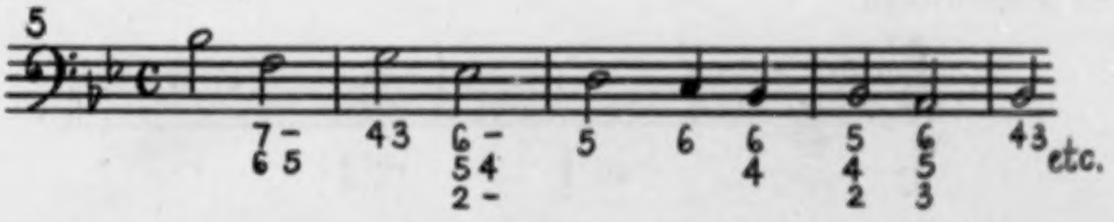
a. An accidental without a figure refers to the third above the bass tone.
b. Accidentals follow the figure affected.
c. The slanting stroke (6̸) indicates that a tone is raised a chromatic half-step.



4. Nonharmonic tones

a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
b. A dash indicates that a tone is held or repeated.

(PH, page 188 - Ex. 5)[1]



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[1] Raymond C. Robinson, Progressive Harmony (Boston: Copyright, 1942, by Bruce Humphries, Inc.) Used by permission.

B. Chord symbols

1. Key indication

a. A capital letter followed by a colon indicates a major key.
C: B♭ : F♯:

b. A small letter followed by a colon indicates a minor key.
c: b♭ : f♯:

2. The Roman numeral chord symbol (triads)

The quality of each triad type is shown by the Roman numeral symbol as follows:

a. A large Roman numeral indicates a major triad.
I V

b. A lower-case Roman numeral indicates a minor triad.
ii iii

c. A large Roman numeral with a plus sign (+) at the upper right indicates an augmented triad.
III^+

d. A lower-case Roman numeral with a circle at the upper right indicates a diminished triad.
vii^o

3. Inversions

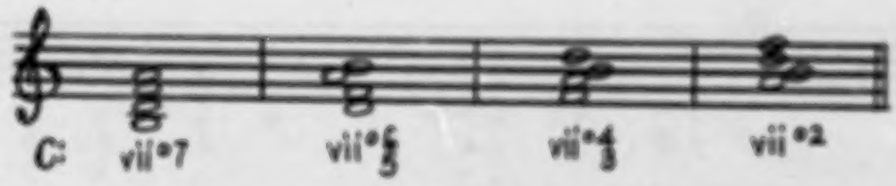
The Arabic numerals from figured bass are placed to the upper right, and to the right of the Roman numeral to show the chord inversion.

I^6 I^6_4

4. Seventh (ninth, etc.) chords

V^7 V^6_5 V^9 $V^4_{\substack{3\\2}}$ V^{11} V^{13}

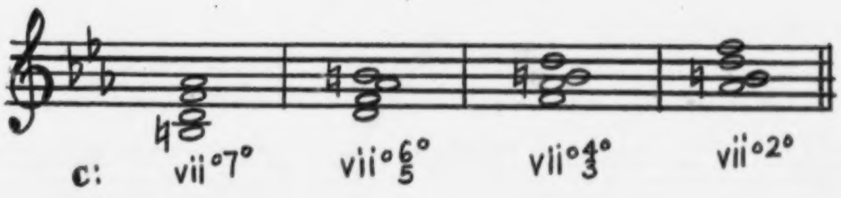
The "Leading-tone Seventh" is built upon the seventh degree in major and symbolized:



The circle denoting the diminished triad is placed between the Roman numeral and the figures indicating inversions.

The "Diminished Seventh" is found on the raised leading tone in the minor key. This fully diminished chord is indicated by a second circle (°) following the Arabic 7 and is retained in all of the inversions.

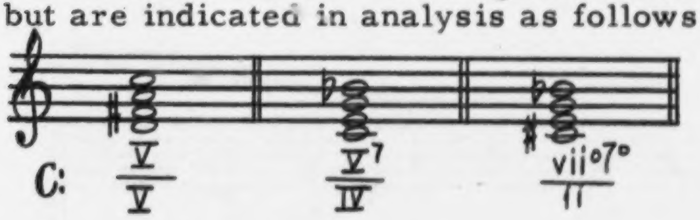
ROBINSON (PH)



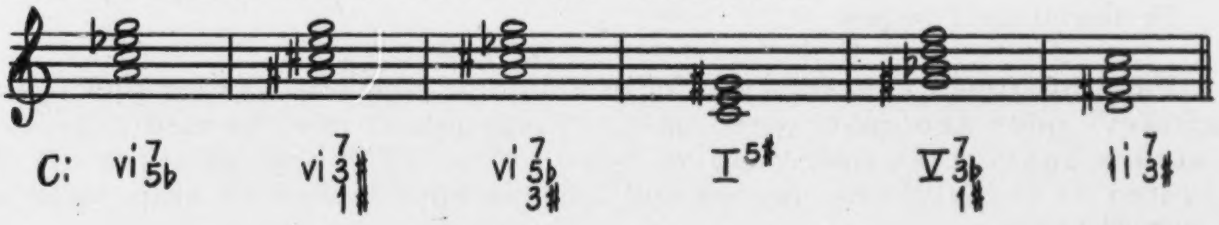
5. Altered tones

Chromatic inflections can be expressed by the Roman numeral system described above, as long as the resulting chord is a conventional major, minor, augmented or diminished triad.

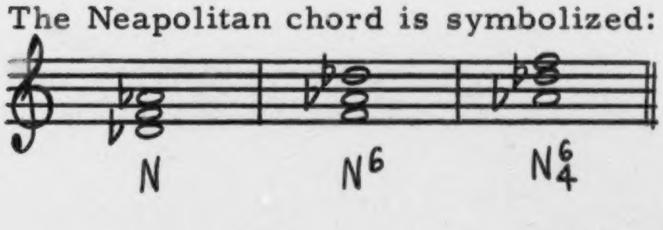
"Borrowed chords" or "neighbor-dominants" are read as "V of V" but are indicated in analysis as follows:



"An altered chord is one in which one or more tones are chromatically changed, and which does not thereby lose its identity as a classified chord in the same relationship to its surroundings as that of the original unaltered form." (page 212)[1] These altered chords are symbolized with the Roman numeral of the unaltered chord followed by the alterations. Accidentals follow the figures representing chord members; 1 is used for the chord root.



The Neapolitan chord is symbolized:



The conventional augmented sixth chords are named and symbolized as follows; the plus sign (+) means augmented:

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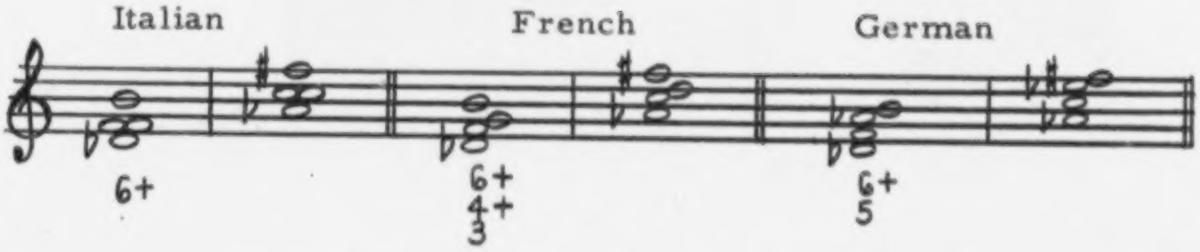
[1] Raymond C. Robinson, Progressive Harmony (Boston: Copyright, 1942, by Bruce Humphries, Inc.) Used by permission.

ROBINSON (PH)

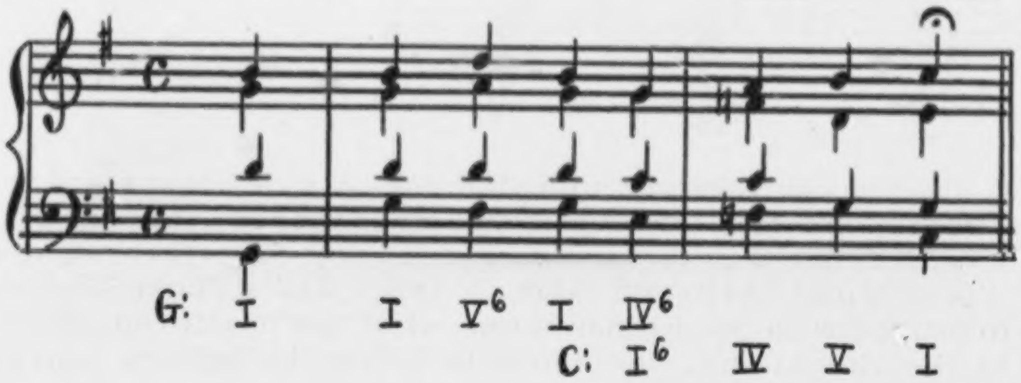
(PH, page 221, second example)[1]



6. Modulation

Robinson says that every modulation is effected by a pivot chord. The common chord may be chromatically altered in one or both keys. The symbolization shows a dual analysis for the common chord.

(PH, page 98, last example)[1] Bach: Chorale 148



C. Nonharmonic tones

Passing-tones are shown in both accented and unaccented positions; auxiliary-tones are unaccented only. Suspensions may be tied over or may be struck again; they may resolve down or up. The appoggiatura may be accented or (rarely) unaccented and may be approached by skip, step or as an initial tone.

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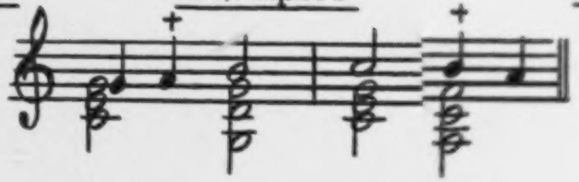
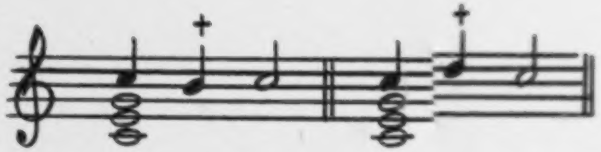
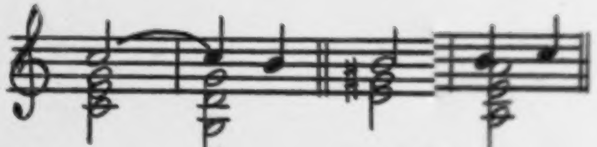
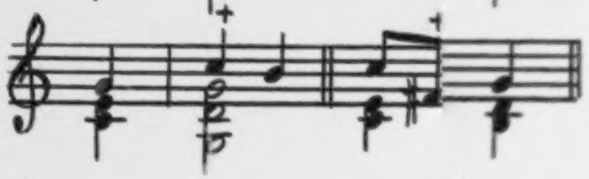
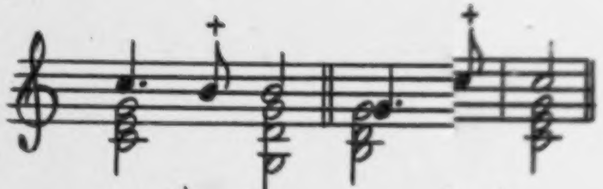
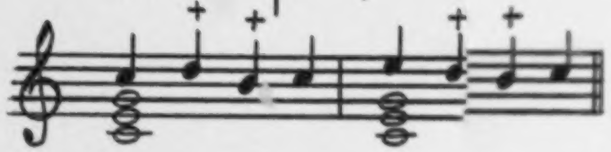
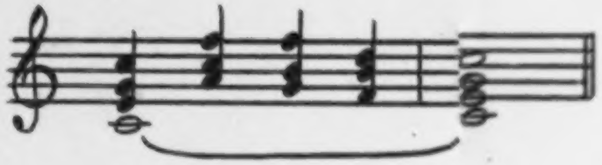
[1] Raymond C. Robinson, Progressive Harmony (Boston: Copyright, 1942, by Bruce Humphries, Inc.) Used by permission.

ROBINSON (PH)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing-tone	None are used - + marks the dissonant tone		By step	By step	Same as approach
Auxiliary-tone			By step	By step	Opposite to approach
Suspension (retardation)			By tied or repeated tone	By step	Down or up
Appoggiatura			By skip or step	By step	Opposite to approach
Anticipation			By step or skip	By re-peated note	Same tone
Changing-tones			By step and skip	By skip and step	
Pedal point			Held tone - member of first and last chords		

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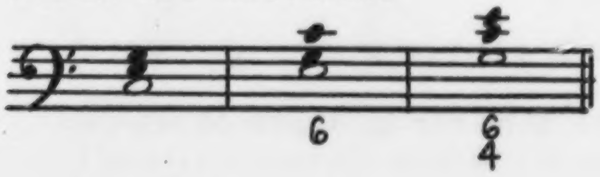
SALZER (SH)

This text, written by Felix Salzer, a former pupil of Heinrich Schenker, presents the ideas contained in Schenker's writings in a systematic and pedagogic way for the training of students. While it may be only a matter of academic interest, it is sometimes difficult to separate Schenker's ideas from those of Salzer. The work covers a different area from that covered by the traditional harmony book, since it is primarily concerned with showing "chord significance" rather than the "chord grammar" which other books emphasize. Since the rudiments of theory and the basic concepts needed to understand "chord grammar" are not contained in this book, it must be assumed that this text would be useful only to the student who has already acquired that foundation.

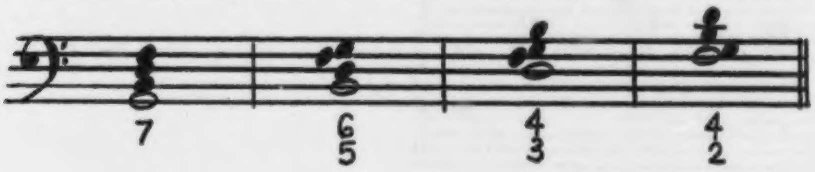
A. Figured bass

There are no examples of figured bass as such; the figures are used only in connection with the Roman numeral to show inversion.

1. Triads and inversions



2. Seventh (ninth, etc.) chords and inversions

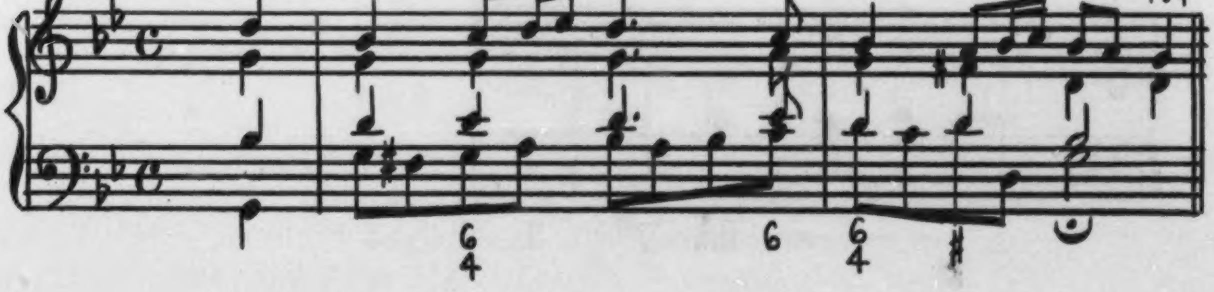


3. Altered tones

An accidental without a figure refers to the third above the bass tone.

(SH, Vol. II, page 74 - 237)[1]

Bach Chorale



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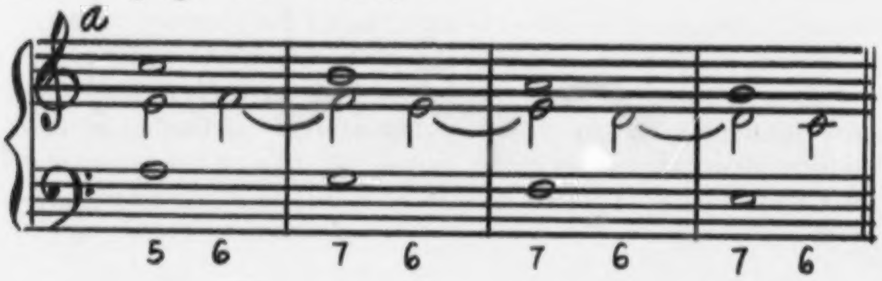
[1] Felix Salzer, Structural Hearing Vols. 1 and 2. (New York: Dover Publications, Inc., 1962). Used by permission.

SALZER (SH)

4. Nonharmonic tones

Nonharmonic tones are shown by spacing and vertical alignment.

(SH, Vol. II, page 76 - 242a)[1]



B. Chord symbols

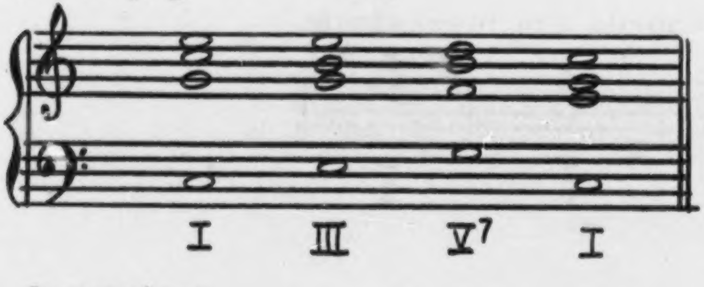
1. Key indication

Keys are not indicated.

2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.

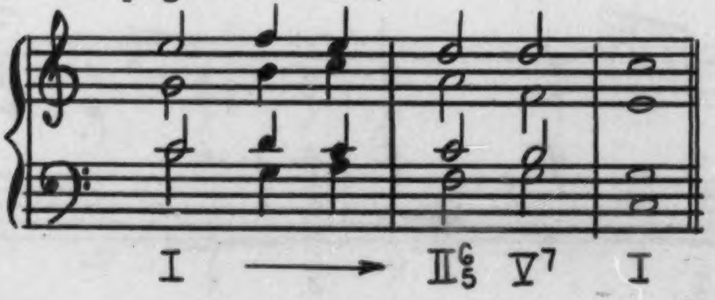
(SH, Vol. II, page 27 - 101a)[1]



3. Inversions

Arabic numerals are placed to the upper right and to the right of the Roman numeral to show the chord inversion.

(SH, Vol. II, page 52 - 188f)[1]



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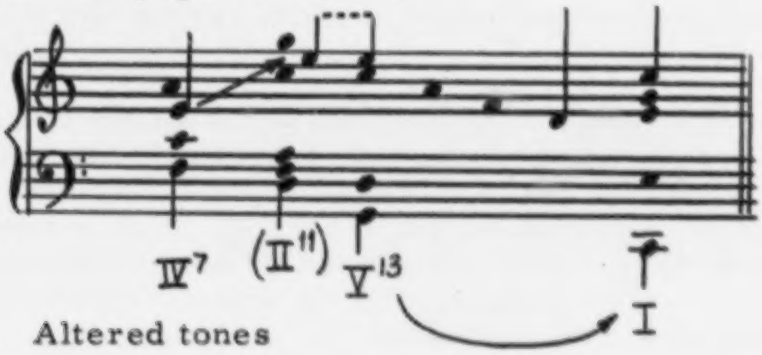
[1] Felix Salzer, Structural Hearing Vol. 2 (New York: Dover Publications, Inc., 1962). Used by permission.

4. Seventh (ninth, etc.) chords

Contrary to Schenker's later views, Salzer uses the concept of ninth, eleventh and thirteenth chords.

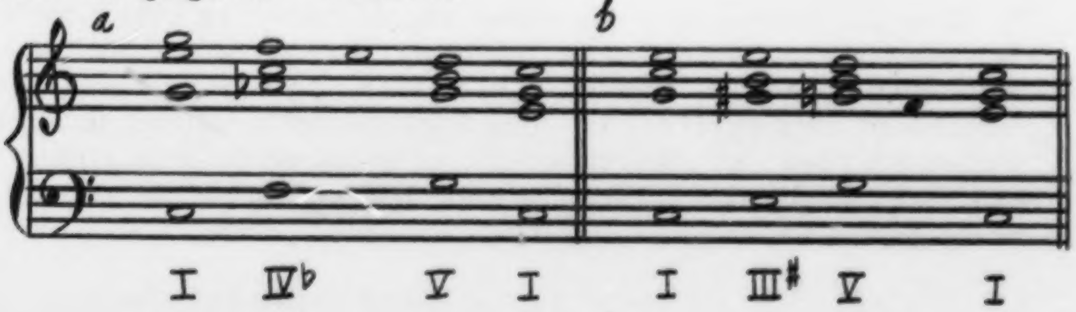
(SH, Vol. II, page 99 - 290a)[1]



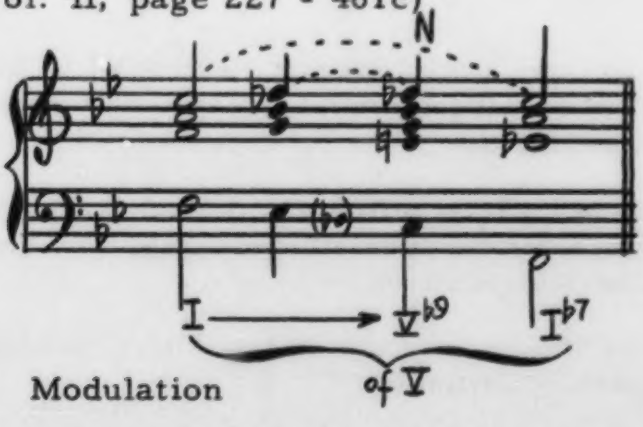
5. Altered tones

Most often chromatic alterations are not shown in the Roman numeral analysis. In the few cases showing altered tones, these are indicated by accidentals placed to the right of the Roman numeral, or with the accidentals preceding the Arabic figures.

(SH, Vol. II, page 28 - 111a, b)[1]



(SH, Vol. II, page 227 - 461c)[1]



6. Modulation

Following Schenker's later thinking, Salzer does not admit the concept of modulation.

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[1] Felix Salzer, Structural Hearing Vol. 2 (New York: Dover Publications, Inc., 1962). Used by permission.

SALZER (SH)

7. Other symbolization

The most important symbolization in this book is in the form of graphs, sometimes on different levels, which depict the structure and prolongation of a composition. While all of the detailed concepts cannot be given here, the graphs are often self explanatory if the basic terms and abbreviations are known. Some of the most important concepts, terms and symbols are given below.

a. The structural framework of a composition is shown by large Roman numerals. The fundamental harmonic progression is I-V-I; the elaborated progressions are I-II-V-I, I-III-V-I and I-IV-V-I; the secondary harmonic progression is I-VI-V-I. Every composition will exhibit one of these basic progressions as its harmonic structure. Less important prolonging chords may be shown as smaller Roman numerals on a different level.

b. The following notes are given by Salzer at the beginning of Volume II (page xiii)[1] as an aid to reading the graphs:

1. The note-values indicate the structural value and significance of tones and chords; they do not indicate rhythmic values.

2. The difference in structural significance is given in four different note-values: half-notes, quarter-notes, notes without stem and occasionally eighth-notes. The latter are used to indicate embellishments and appoggiaturas. The highest note-values in a graph represent tones or chords of the highest structural order. Among notes of equal value, those whose stems reach the same level are of the same structural order.

3. The relation between identical and different tones or chords, and specifically their structural connection, is indicated by dotted or solid slurs, lines, arrows or by beams.

4. Horizontal, solid arrows (used mostly in regard to bass motions) indicate the direction or driving tendency of the music in general, or passing motions in particular.

5. A note in parenthesis with or without a dotted stem means a note expected on the basis of direct voice leading, but omitted or substituted for in the composition.

6. Brackets of various kinds indicate either chord prolongations (⏟) or melodic parallelisms (┌──┐).

7. Roman numerals are assigned to harmonic chords only; the relative size of these numerals corresponds to their structural value.

8. A small Roman numeral in parenthesis indicates the chord of harmonic emphasis.

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[1] Felix Salzer, Structural Hearing Vol. 2 (New York: Dover Publications, Inc., 1962). Used by permission.

c. The following "Glossary of Symbols" (page xiv)[1] contains the abbreviations for the most important types of prolongation.

P	Passing tone or passing chord
N	Neighbor note or neighbor-note chord
UN and LN	Upper and lower neighbor note
IN	Incomplete neighbor note
N P	Neighbor-passing chord
Em	Embellishing chord
CS	Contrapuntal-structural chord
DF	Double function chord
M	Mixture
||	Interruption
D	Dividing dominant
AB or ABA[1]	Indication of form

d. The elimination of details in successive graphs and the consequent clarification of the basic structure is shown by the following analysis of two phrases of a Bach Chorale (Please see following page for this example.)

C. Nonharmonic tones

In his treatment of two- and three-part counterpoint Salzer uses most of the conventional nonharmonic devices except the appoggiatura and the escape tone. In the place of these two terms he uses the concept of the "incomplete neighbor," i. e., a neighbor note approached by skip and resolved by step, or approached by step and left by skip. These and other terms are also applied to chords. Passing chords are not limited to those approached and left by step, but may include those which are passed through on the way to a goal, that is, those which are approached and left by skip or step.

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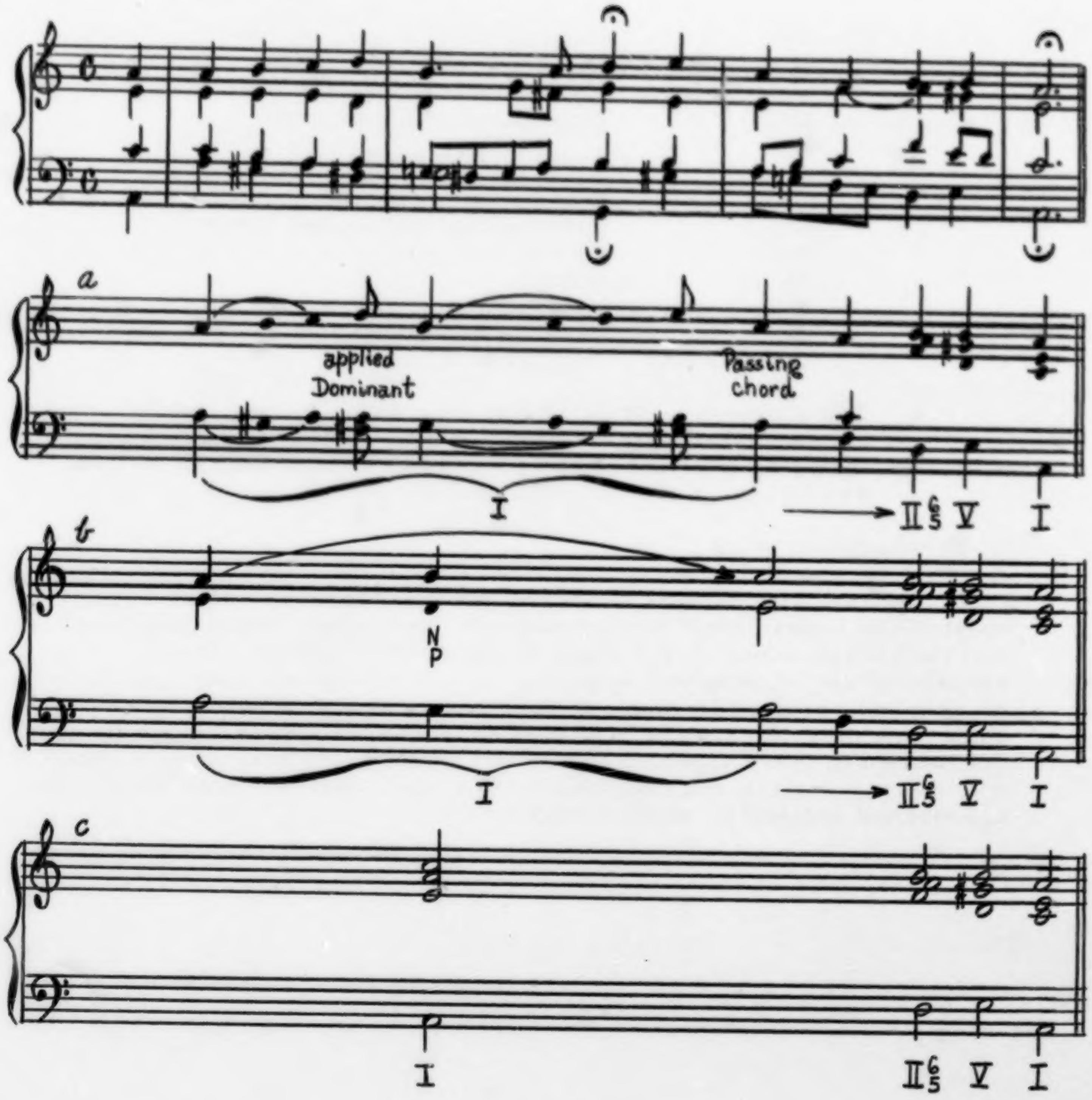
[1] Felix Salzer, Structural Hearing Vol. 2 (New York: Dover Publications, Inc., 1962). Used by permission.

SALZER (SH)

(SH, Vol. II, page 3 - III)[1]

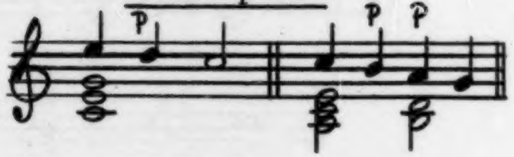
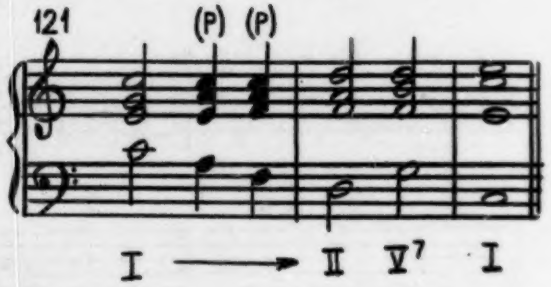
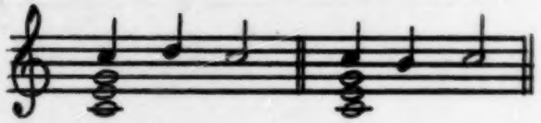
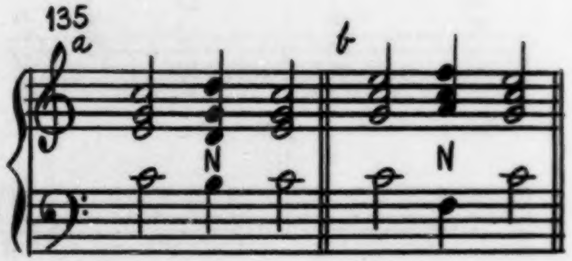

a
applied Dominant
Passing chord
I
II 6/5
V
I
b
N P
I
II 6/5
V
I
c
I
II 6/5
V
I

---

[1] Felix Salzer, Structural Hearing Vol. 2 (New York: Dover Publications, Inc., 1962). Used by permission.

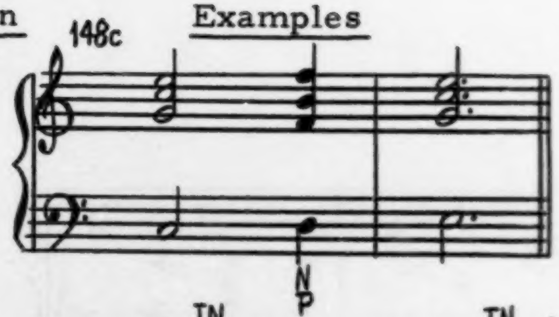
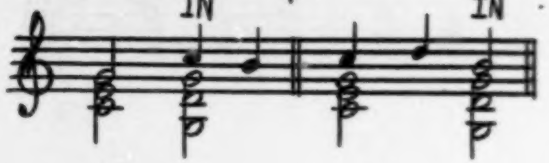
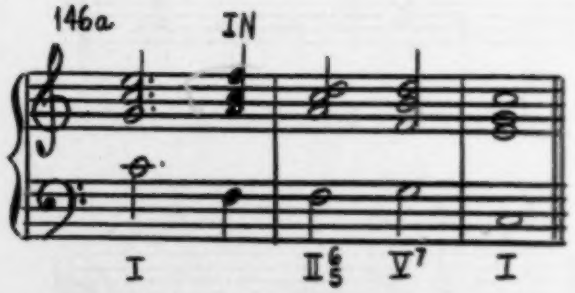
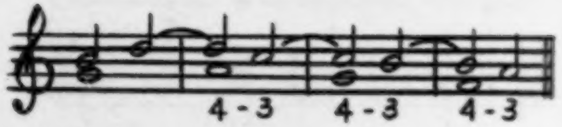
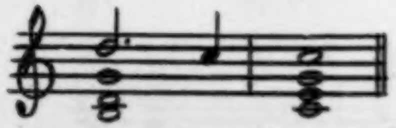
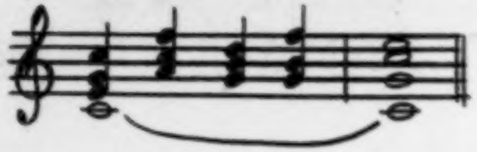
SALZER (SH)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing tone	P		By step	By step	Same as approach
Passing chord	P		By skip or step	By skip or step	
Neighbor note	N UN LN		By step	By step	Opposite to approach
Neighbor-note chord	N		At least one part is a neighbor note		

SALZER (SH)

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Neighbor-passing chord	N P		One part is a neighbor note; one part is a passing tone.		
Incomplete neighbor note	IN		By skip — By step —	By step By skip	
Incomplete neighbor-note chord	IN		By step — or vice versa	By skip	
Suspension			By same tone	By step	Down (or up)
Anticipation			By step or skip	Repeated note	Same tone
Pedal			Held tone - member of first and last chords		

SCHENKER (H)

The theories of Heinrich Schenker concerning the synthesis and analysis of music are not completely available at the present time in English. However, the impact of his thinking has been so pronounced upon the current scene that it was thought advisable to include his only work available in a commercially published English translation. In doing this, the author is aware that the discussion of this early work presents an incomplete picture of his later more mature thinking.[1]

Schenker's most significant contribution to symbolization is the use of a series of graphs to show the foreground, middleground, and background of a composition. In his later writings the Ursatz, or basic harmonic structure, is shown to be an elaboration of I-V-I, while the Urlinie, or basic melodic structure, shows a melodic descent from a member of the tonic triad to the tonic note.

In this first work, Harmony, Schenker generally uses staff notation and words to describe concepts although he also uses conventional figured bass and Roman numerals as outlined below.

A. Figured bass

Although he quotes a figured bass from J. S. Bach's Generalbassbüchlein (page 179 - Ex. 140) in which the figures appear between the two staves, and examples from C. P. E. Bach's Manual on Accompaniment (page 118) in which the figures appear below the bass part, figured bass is generally used only in connection with the Roman numeral chord symbol.

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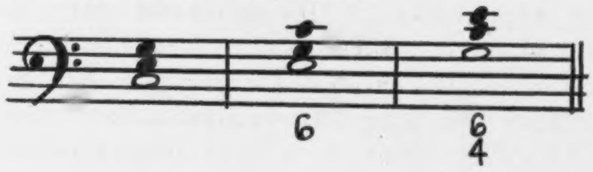
[1] Schenker's important theortetical ideas are contained in the following German publications which appeared over a period of about thirty years under the general title of Neue musikalishe Theorien und Phantasien:

Vol. I	Harmonielehre. Vienna: Universal-Edition A. G., 1906.
Vol. II	Kontrapunkt, Part I. Vienna: Universal-Edition A. G., 1910.
Vol. II	Kontrapunkt, Part II. Vienna: Universal-Edition A. G., 1922.
Vol. III	Der freie Satz. Vienna: Universal-Edition A. G., 1935.

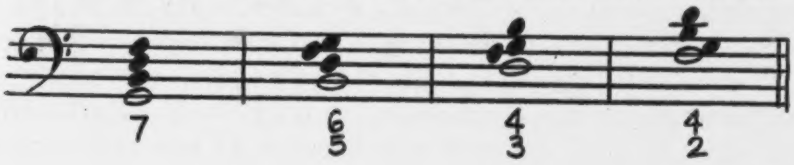
The first volume, which is being studied here, has been translated into English by Elisabeth Mann Borgese and edited and annotated by Oswald Jonas. An English translation, with commentary, was made of Volume III Der freie Satz as a Ph. D. thesis (University of Iowa, 1960) by Theodore Howard Kruger. The two works in English concerning Schenker's theories which are most generally available are, A Challenge to Musical Tradition by Adele T. Katz and Structural Hearing by Felix Salzer. The latter work is covered elsewhere in this study.

SCHENKER (H)

1. Triads and inversions



2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

   None were found.

4. Nonharmonic tones

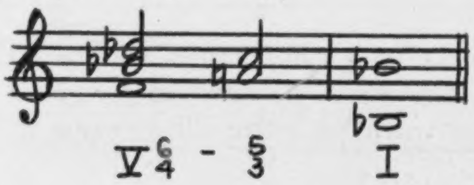
   None were found.

B. Chord symbols

1. Key indication

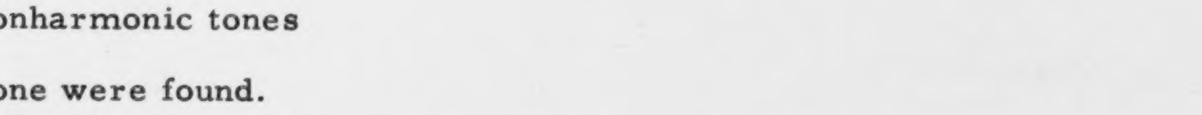
   a. Most often no key is indicated.

(H, page 207 - Ex. 179)[1]



   b. Occasionally keys are written out as in the following table; a capital letter is followed by the word major or minor.

(H, page 185 - Table 2)[1]



A	B	C	D
G major I D major IV C major V	F major II E♭ major III B♭ major VI	A♭ major VII F minor II	E major/minor III
E minor III B minor VI A minor VII	G minor I D minor IV C minor V		B major/minor VI

---

[1] Heinrich Schenker, Harmony. Trans. Elisabeth Mann Borgese. Ed. Oswald Jonas (Chicago: The University of Chicago Press, 1954.) Used by permission.

c. Schenker also believes that a composition, in practice, utilizes a combination of the major and minor scales as well as those of the church modes; such a "combination" is symbolized:

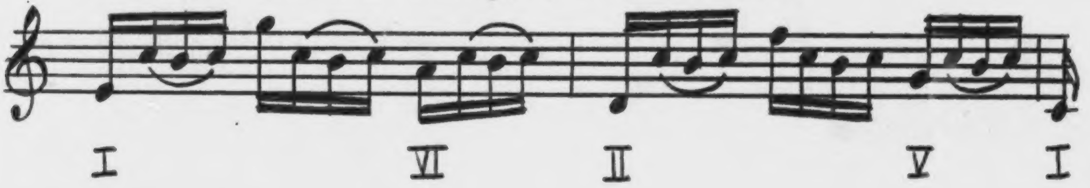
$$C \frac{\text{major}}{\text{minor}}$$

2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads.

(H, page 143 - Ex. 117)[1]

J. S. Bach, Sonata, C Major, Violin Solo

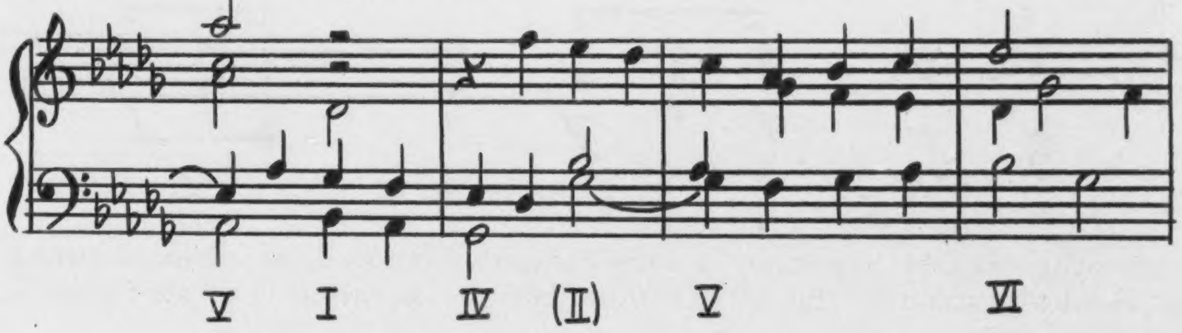


3. Inversions

With the exception of the $\begin{smallmatrix}6&5\\4&3\end{smallmatrix}$ decoration of the V chord, shown in B. 1. a. above, Schenker does not customarily show the inversion of a chord in his Roman numeral analysis. The analysis shows the basic chord, with the addition of a 7 if it is a seventh chord, and the altered tones, if any.

(H, page 161 - Ex. 131)[1]

J. S. Bach, Well-tempered Clavier, Vol. I, Fugue, B-flat Minor:



4. Seventh (ninth, etc.) chords

At this stage in his thinking Schenker still symbolizes the seventh chord; later the seventh is explained as being derived from nonharmonic situations. Similarly, he rejects the concept of the ninth chord and the higher discords as independent formations.

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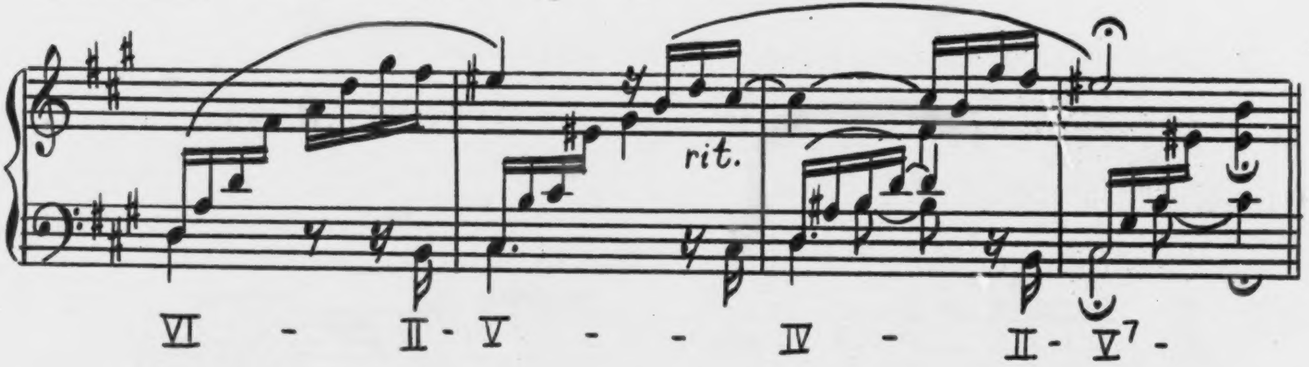
[1] Heinrich Schenker, Harmony. Trans. Elisabeth Mann Borgese. Ed. Oswald Jonas (Chicago: The University of Chicago Press, 1954). Used by permission.

SCHENKER (H)

The Arabic numeral 7 is placed at the upper right of the Roman numeral to indicate the root position or inversion of a seventh chord.

(H, page 220 - Ex. 190)[1]

Schumann, "Dichterliebe," op. 48, No. 1:

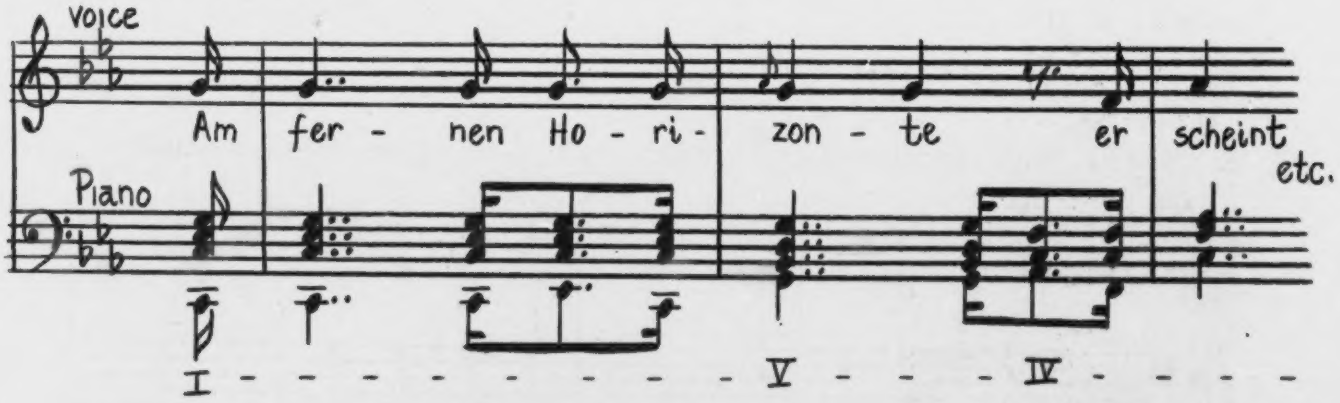


5. Altered tones

Many times commonly altered tones, such as the variable degrees of the minor scale, are not shown by the chord symbol; the symbol is used to show the basic functions within a tonality.

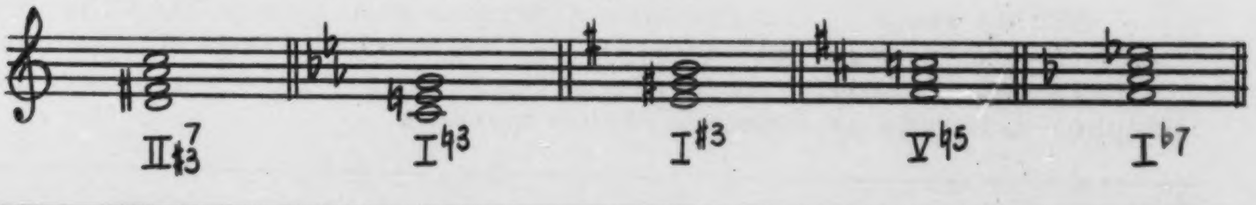
(H, page 260 - Ex. 224)[1]

Schubert, "Die Stadt":


Voice
Am fer - nen Ho - ri - zon - te er scheint
etc.
Piano
I - - - - - - - - - - V - - - - IV - - - - -

At other times Schenker's chord symbol shows the altered tones. The symbolization of the alterations may be summarized as follows:

a. Arabic numerals, denoting the third, fifth or seventh of a chord, preceded by the proper accidental, are added to the right of the Roman numeral symbol.



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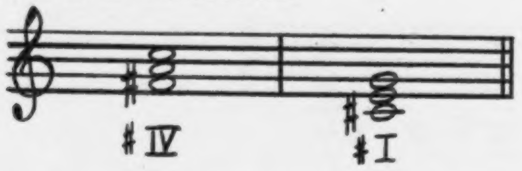
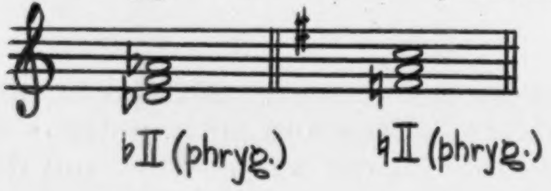
[1] Heinrich Schenker, Harmony. Trans. Elisabeth Mann Borgese. Ed. Oswald Jonas (Chicago: The University of Chicago Press, 1954). Used by permission.

As indicated in the example, the proper accidental for each key is used. The same symbolization is used whether the chord is inverted or not.

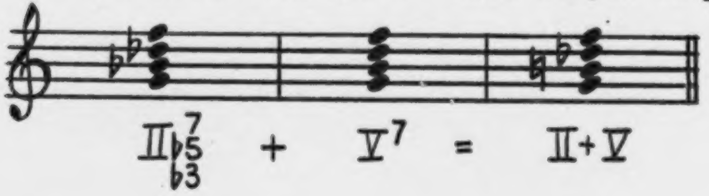
b. If the root of a chord is altered, the accidental precedes the Roman numeral.



c. The triad built upon the lowered second degree he terms a "Phrygian II". It is symbolized:



d. The chords containing the augmented sixth or diminished third he says have a dual function. The $\mathrm{II}\begin{smallmatrix}7\\ \flat 5\\ \flat 3\end{smallmatrix}$ of F minor is combined with the V^7 of C major to produce this chord:



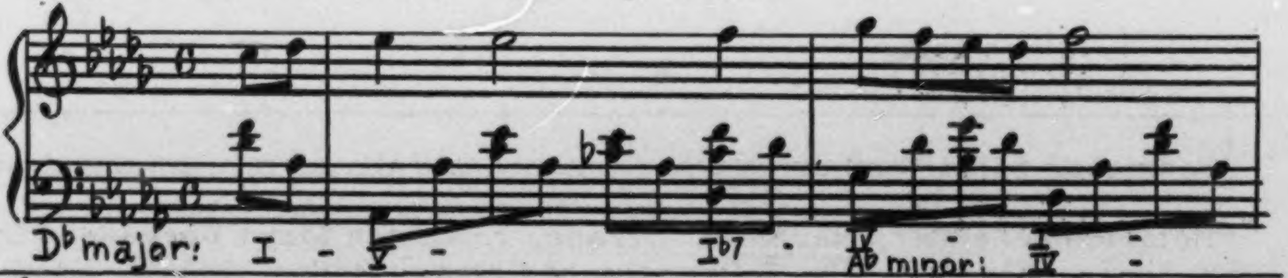
6. Modulation

At this stage Schenker still recognized the concept of modulation; later he gives up the term. He gives the following possibilities:

(1) Modulation by changing the meaning of a harmony;
(2) Modulation by chromatic change;
(3) Modulation by enharmonic change.

These are symbolized by a dual analysis as in the following example:

(H, page 326 - Ex. 295)[1]
Chopin, Prelude, D-flat major, op. 28, No. 15:



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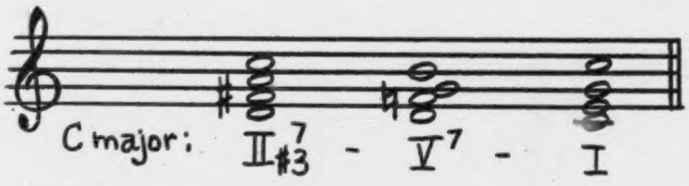
[1] Heinrich Schenker, Harmony. Trans. Elisabeth Mann Borgese. Ed. Oswald Jonas (Chicago: The University of Chicago Press, 1954). Used by permission.

SCHENKER (H)

This book also uses the term "tonicalization"[1] to describe the chromatic emphasis that is usually now referred to as a "secondary dominant."

(H, page 263 - Ex. 229)[2]



C. Nonharmonic tones

Only certain nonharmonic concepts are directly defined in this book. Passing notes, changing notes, auxiliary notes and anticipations are mentioned in a general way (on pages 306, 307); the suspension and the pedal point are discussed in later chapters; no mention of the appoggiatura was found.

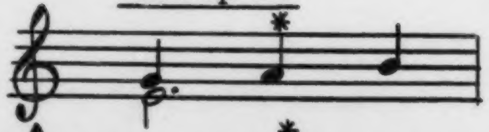
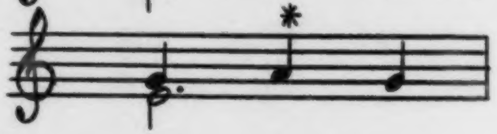
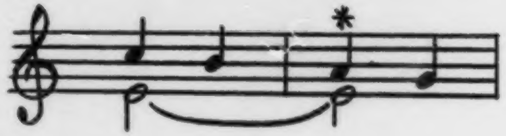
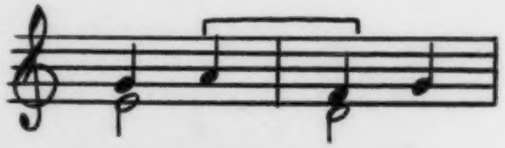
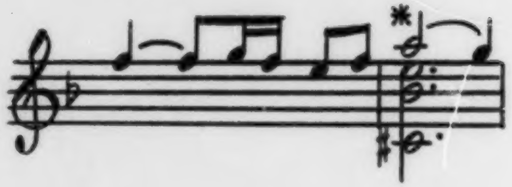
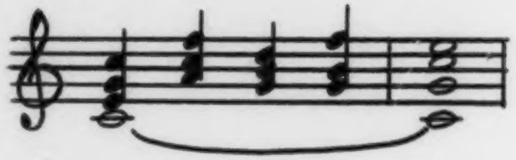
---

[1] Sessions, Salzer and some other authors use the term, "tonicization."

[2] Heinrich Schenker, Harmony. Trans. Elisabeth Mann Borgese. Ed. Oswald Jonas (Chicago: The University of Chicago Press, 1954). Used by permission.

SCHENKER (H)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing note	None are used		By step	By step	Same as approach
Auxiliary note			By step	By step	Opposite to approach
Changing notes (accented dissonance)					
Anticipation (anticipates a note in the succeeding chord)					
Suspension (prepared or unprepared, resolved or unresolved)					
Pedal point (must be a scale-step and must also dissonate with harmonies above it)					

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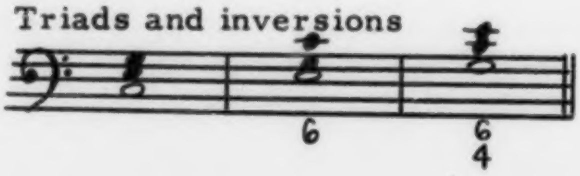
SCHOENBERG (TH)

While this book was originally written in 1911, an English translation by Robert D. W. Adams, considerably abridged, was issued in 1948 as a practical student edition.[1]

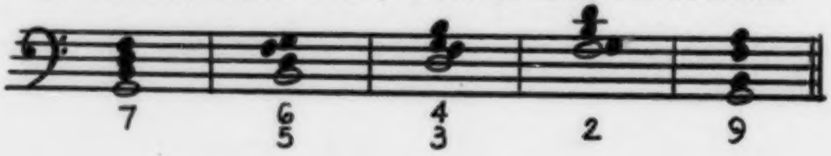
A. Figured bass

There are no examples of figured bass used, but the figuration is explained so that the inversions of chords can be symbolized using Arabic numerals with the Roman numeral.

1. Triads and inversions



2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

   Not shown by figured bass.

4. Nonharmonic tones

   Not shown by figured bass

B. Chord symbols

1. Key indication

   a. A capital letter indicates a major key.
   C B♭ F♯

   b. A small letter indicates a minor key.
   c b♭ f♯

2. The Roman numeral chord symbol (triads)

   Large Roman numerals are used for all types of triads.

---

[1] In order to have the benefit of Schoenberg's more recent thinking about tonal harmony another more recent book was also examined, Structural Functions of Harmony, by Arnold Schoenberg, edited by Humphrey Searle (New York: W. W. Norton & Co., Inc., 1954), and the few points of significant difference in symbolization will be given in footnotes.

3. Inversions

While there are many inconsistencies in the placement of the figures, as a general rule the Arabic numerals from figured bass are added to the upper right and to the right of the Roman numeral to show chord inversion.[1]

I^6 I^6_4

4. Seventh (ninth, etc.) chords

The figure 7 is usually placed to the lower right of the Roman numeral; figures indicating inversions of seventh chords usually appear to the right of the Roman numeral.

V_7 V^6_5 V^4_3 V_2

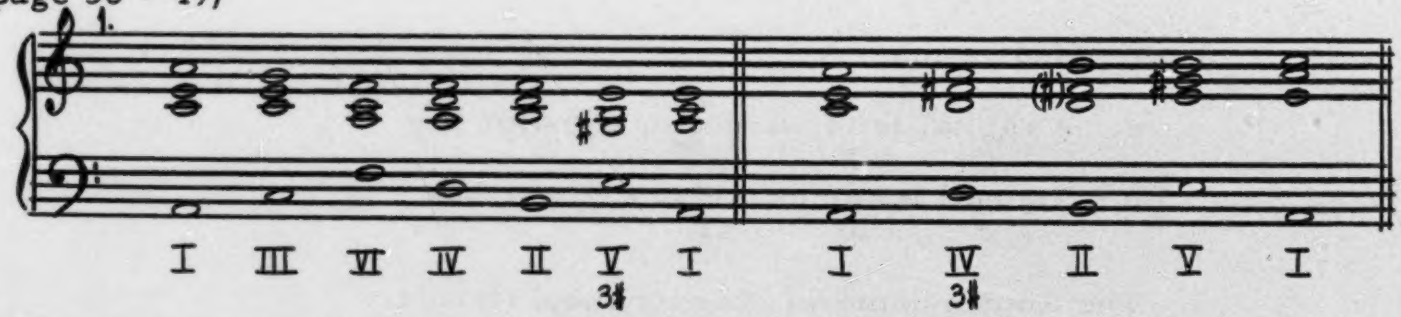
However, the following different examples were observed, suggesting, that to Schoenberg, the exact placement of the Arabic figures in relation to the Roman numeral was of little importance, so long as the correct information was conveyed.

VII^6 I_6 $\overset{6}{II}$ VII^2 V_2 $\overset{2}{III}$ $\overset{\overset{5}{6}}{VII}$ IV^4_6 $III_{\substack{5\\6}}$

5. Altered tones

In discussing the minor mode, Schoenberg gives the following advice to the student (page 56)[2]: "The student should use V next to the last chord, and always with the raised tone (as a dominant chord). The raised tones are indicated in the figures under the bass; beside the figure indicating the raised interval appears the appropriate sharp or natural, as for example 3♯, 5♯, etc. (or in C minor 3♮, 5♮)."

(TH, page 56 - 49)[1]



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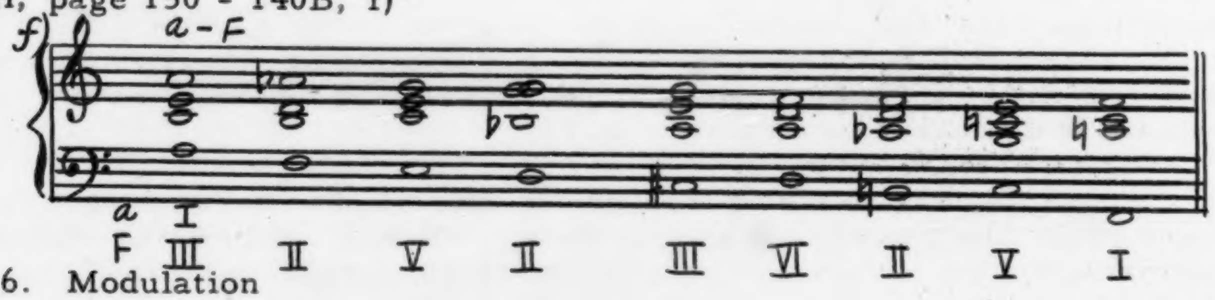
[1] The music examples in the English translation were evidently taken from an earlier German edition. This is exaplined in a footnote by the translator (page 34). "The figure $^{6}_{4}$ and other composite figures ($^{6}_{5}$, $^{4}_{3}$, etc.) will appear inverted in Schoenberg's illustrations, which follow the German practice of placing the smaller digit above. The translated text follows the English and American usage, with the smaller digit below. There is no musical significance in the order of the digits."

[2] Arnold Schoenberg, Theory of Harmony, translated by Robert D. W. Adams (New York: Philosophical Library, Inc., 1948). Used by permission.

However, despite this direction, there are no other examples of this symbolization of altered chords in the entire book, and there are innumerable examples of altered chords in staff notation with the unaltered Roman numeral.[1]

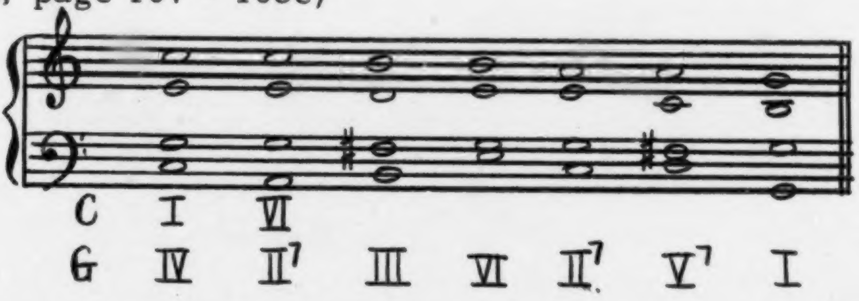
(TH, page 150 - 140B, f)[2]



6. Modulation

Modulation to near and distant keys is treated extensively but the usual symbolization is similar to the following example:[3]

(TH, page 107 - 108e)[2]



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[1] In Structural Functions of Harmony (page 9) there is the following footnote: "Crossed Roman numerals - ~~VI~~, ~~V~~, ~~III~~, ~~II~~, etc., indicate that the chords are altered through the use of substitute tones." Throughout the rest of that book all altered chords are symbolized with the bar through the Roman numeral. In Theory of Harmony Schoenberg is apparently using Roman numerals in a very general way to show chord functions in relation to a tonic, since inversions and altered tones are not consistently shown. In Structural Functions of Harmony he has separted altered chords (~~VI~~) from unaltered chords (VI), but without specifying the exact alterations.

[2] Arnold Schoenberg, Theory of Harmony, trans. by Robert D. W. Adams (New York: Philosophical Library, Inc., 1948). Used by permission.

[3] In the later book, Structural Functions of Harmony, Schoenberg, while still considering modulation a valid concept, takes into account what he calls "the principle of monotonality." "According to this principle, every digression from the tonic is considered to be still within the tonality, whether directly or indirectly, closely or remotely related. In other words, there is only one tonality in a piece, and every segment formerly considered as another tonality is only a region, a harmonic contrast within that tonality.

"Monotonality includes modulation--movement towards another mode and even establishment of that mode. But it considers these deviations as regions of the tonality, subordinate to the central power of a tonic." (page 19).

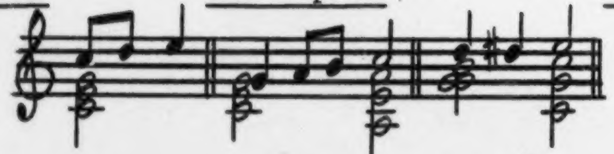
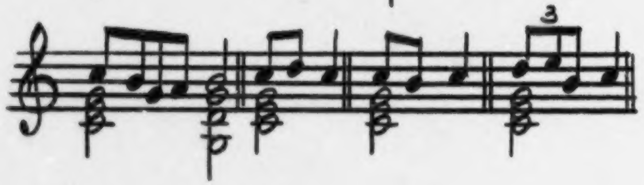
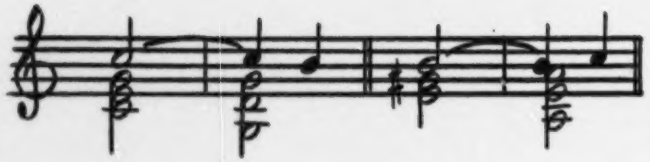
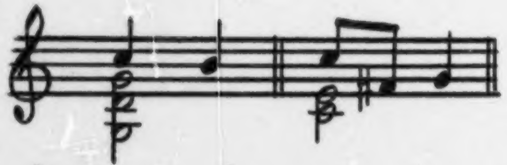
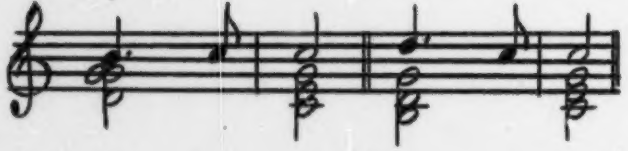
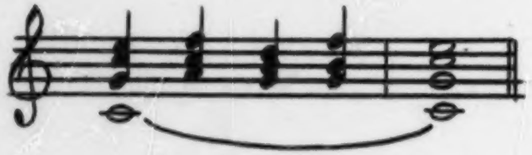
C. Nonharmonic tones

Most of the book is devoted to a study of chord progression which is illustrated by unmetered examples like those shown above. Toward the middle of the book (page 155) is a chapter called Rhythm and Harmony and later (page 246) is a chapter, Harmonizing the Chorale, which discusses cadences. After this is the chapter called Non-Harmonic Tones which explains Suspensions, Passing tones, Embellishments and Anticipations. The Organ point is discussed separately.

Schoenberg is against giving the student exercises of chord progressions which are to be "decorated with non-harmonic tones." He believes that the non-harmonic device should be conceived of as an integral part of the music as it is being written.

SCHOENBERG (TH)

C. Nonharmonic tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing tone (Durchgangsnote)	None are used		By step	By step	Same as approach
Embellishments (Wechselnoten)			By step	By step	Opposite to approach
Suspension (Vorhalt)			By tied or repeated note	By step	Up or down
Free Suspension (appoggiatura) (freien Vorhalt)			By skip or Initial tone	By step	
Anticipation (Vorausnahme)			By step or skip	By repeated note	Same tone
Organ point			Held tone - member of first and last chords.		

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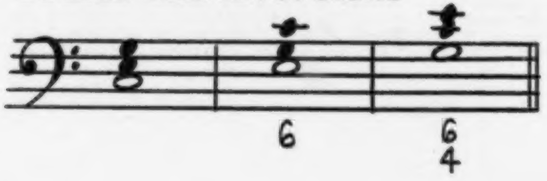
SESSIONS (HP)

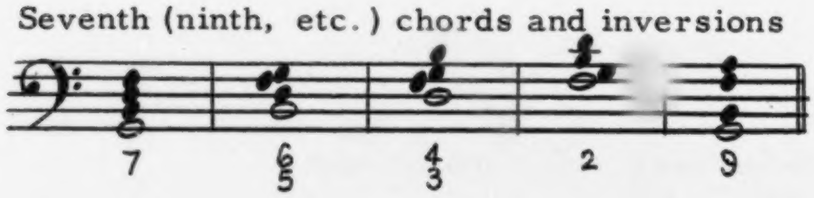
A. Figured bass

Arabic numerals are placed below the bass part.

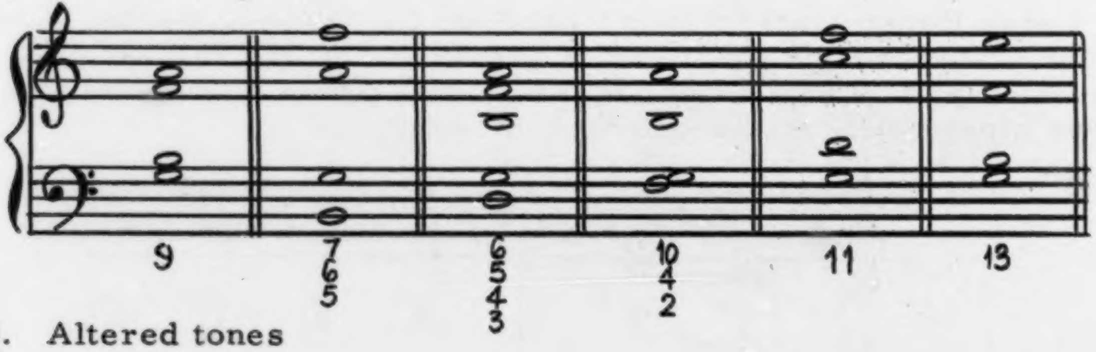
1. Triads and inversions



2. Seventh (ninth, etc.) chords and inversions

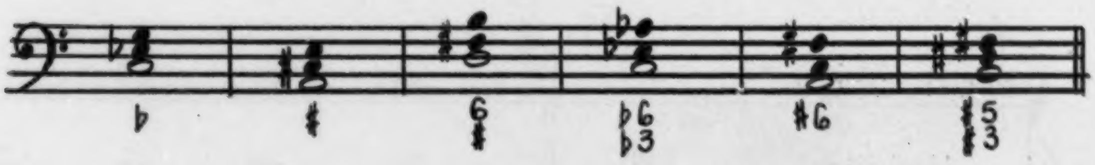


Dissonances higher than the seventh (ninth, etc.) are explained as "frozen" accessory tones, i.e., nonharmonic tones which have become part of a chord. These chords are, however, indicated by the usual figures.



3. Altered tones

   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals precede the figures affected.
   c. The slanting stroke (6̸) is not used.

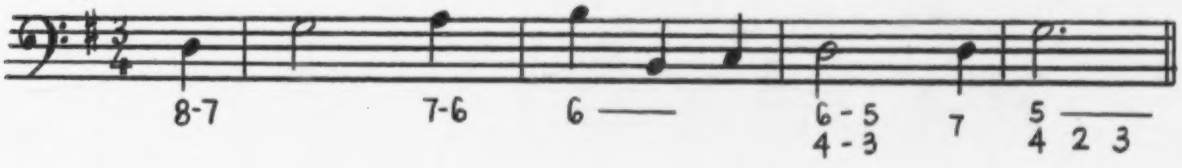


4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.

b. A long dash indicates that a tone is held or repeated.

c. A short dash between two figures indicates the motion takes place in the same voice.



B. Chord symbols

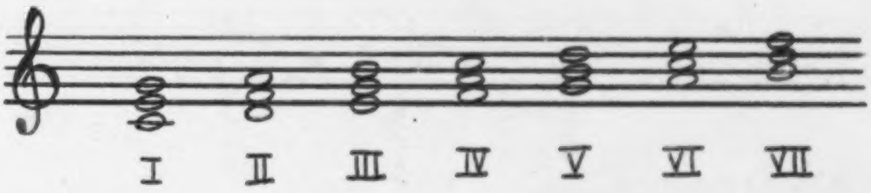
1. Key indication

a. A capital letter indicates a major key.
C Bb F#

b. A small letter indicates a minor key.
c bb f#

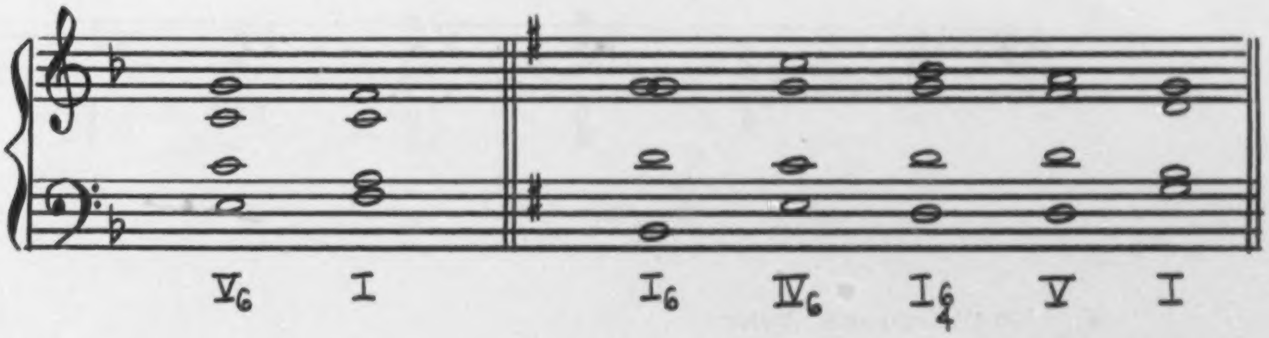
2. The Roman numeral chord symbol (triads)

Large Roman numerals are used for all types of triads. The author states that he will use the Roman and Arabic numerals in the conventional way realizing that these often prove inadequate to symbolize nineteenth- and twentieth-century music.



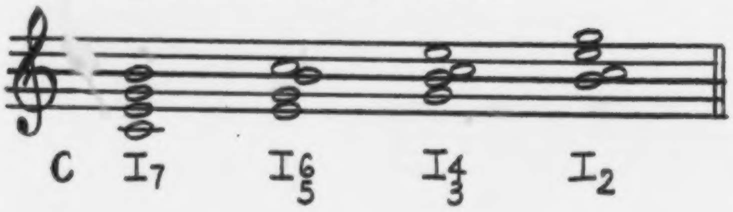
3. Inversions

The Arabic numerals from figured bass are placed to the lower right of the Roman numeral to indicate inversion.



SESSIONS (HP)

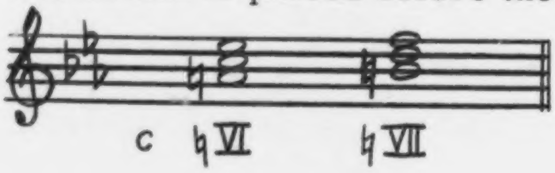
4. Seventh (ninth, etc.) chords



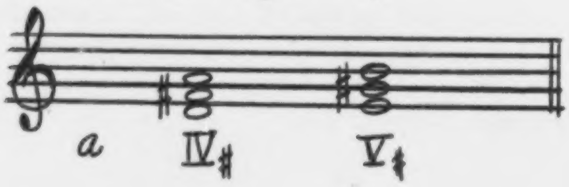
5. Altered tones

The basic figurations used to show alteration are these (see page 63)[1]:

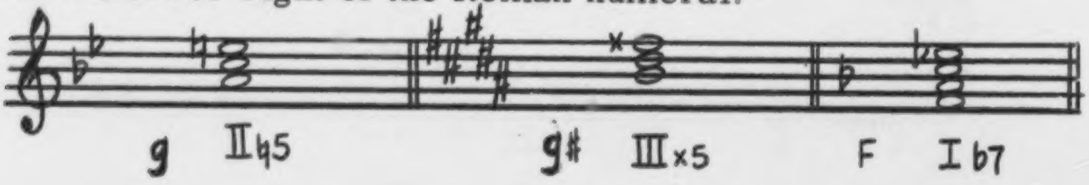
a. In root position, when the root of a chord is altered, the accidental is placed before the Roman numeral.



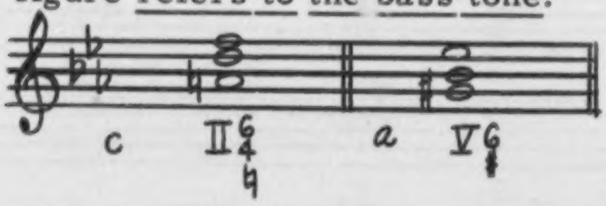
b. In root position, when the third is altered, the accidental is placed below and to the right of the Roman numeral (without the figure 3).



c. In root position, when the fifth or seventh is altered, the accidental, followed by the Arabic numeral, is also placed to the lower right of the Roman numeral.



d. In inverted chords, an accidental not followed by an Arabic figure refers to the bass tone.



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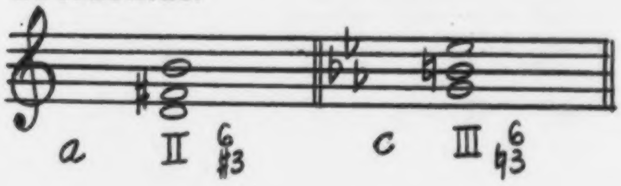
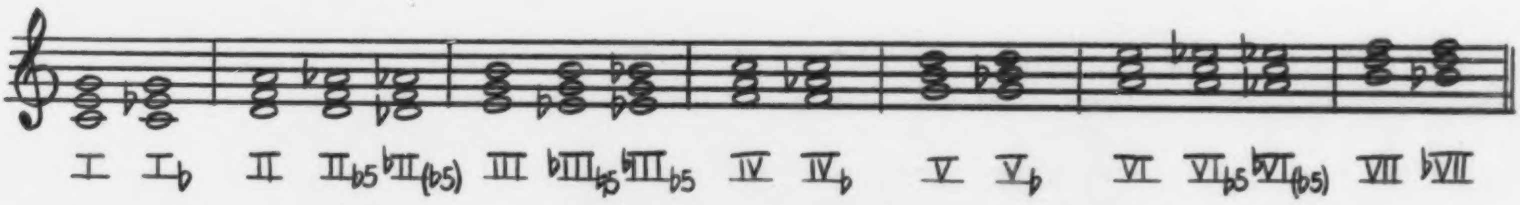
[1] Roger Sessions, Harmonic Practice (New York: Harcourt, Brace & World, 1951). Used by permission.

SESSIONS (HP)

e. In such inverted chords, if the third above the bass note is raised, this must be shown by the figure 3 following the accidental.


a
II 6 #3
c
III 6 ♮3

The resources of the major-minor scale in root position would thus be symbolized:

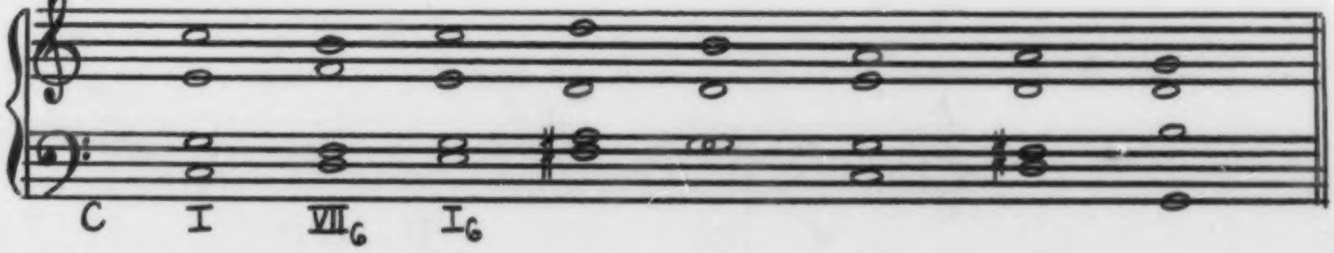

I
I♭
II
II♭5
♭II(♭5)
III
♭III♮5
♭III♭5
IV
IV♭
V
V♭
VI
VI♮5
♭VI(♭5)
VII
♭VII

6. Modulation

Three kinds of common chord, or pivotal chord, modulation are given. The symbolization of the three is generally similar.

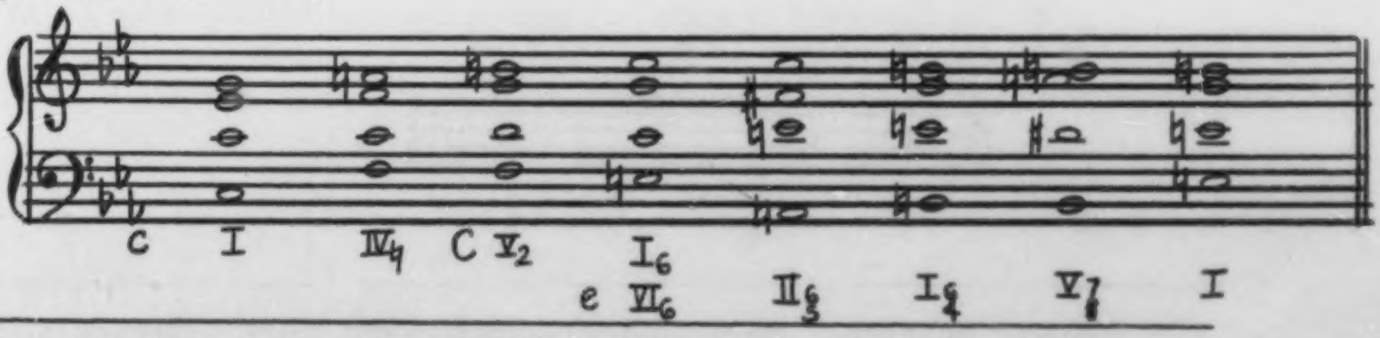
a. Unaltered diatonic chords.

(HP, page 270 - Fig. 67)[1]


C
I
VII6
I6
G
IV6
V6
I
II6/5
V
I

b. Modal alterations

(HP, page 310, line three)[1]

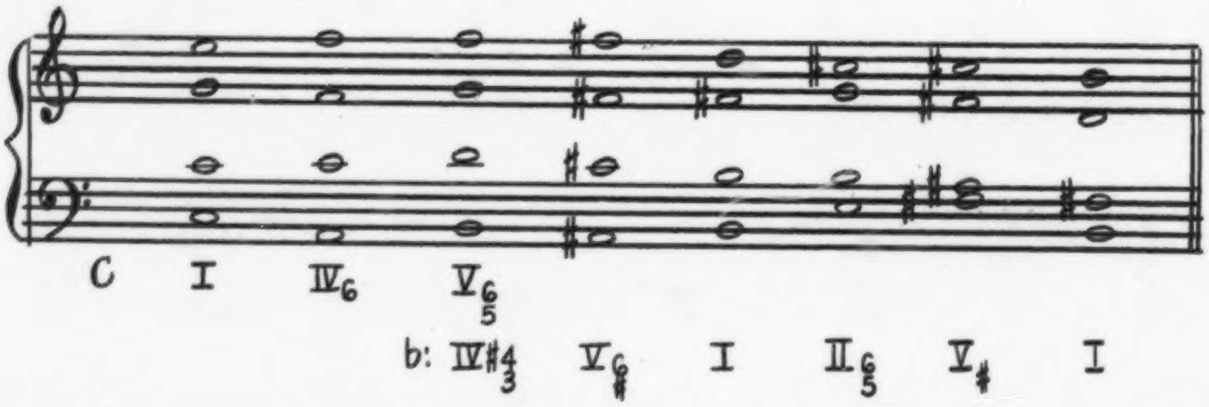

c
I
IV♮
C
V2
I6
e
VI6
II6/5
I6/4
V7
I

---

[1] Roger Sessions, Harmonic Practice (New York: Harcourt, Brace & World, 1951). Used by permission.

c. Enharmonic change

(HP, page 366 - Fig. 213)[1]



C. Nonharmonic tones

These are designated accessory tones and are classified in two groups, unaccented and accented. However, Sessions qualifies this by the following explanation: "It should be clearly understood that the terms 'unaccented' and 'accented' refer here simply to the position of the accessory tone with relation to the tones which immediately precede and follow it. Thus, a typically accented accessory tone may occur on a weak beat provided a consonance follows before the next stronger beat. Likewise, a normally unaccented type may be used on a strong beat provided that the preceding and following tones are still stronger with respect to the phrase as a whole, or provided that the purely transitional or ornamental character of the tone is quite clear." (pp. 128, 129)[1]

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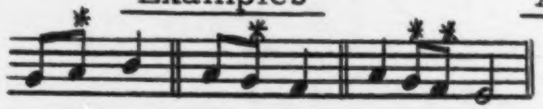
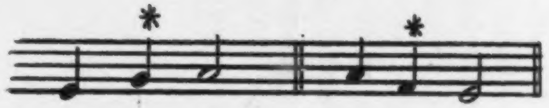
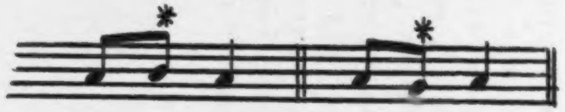
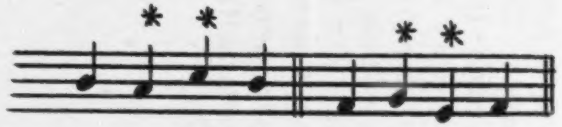
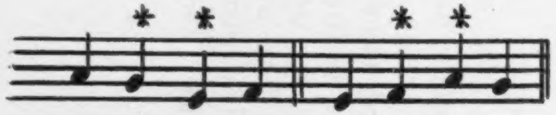
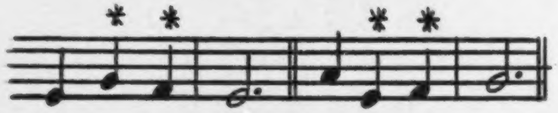
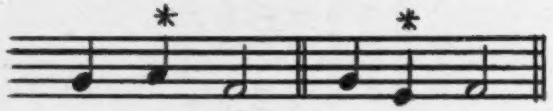
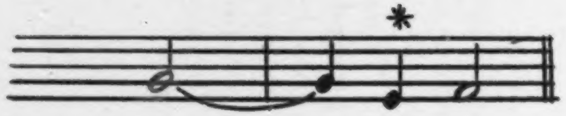
[1] Roger Sessions, Harmonic Practice (New York: Harcourt, Brace & World, 1951). Used by permission.

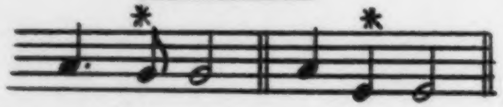
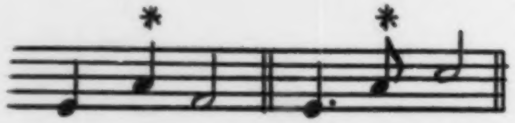
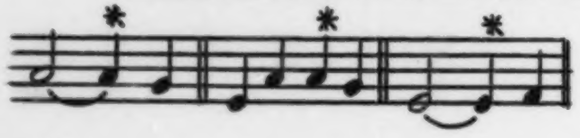
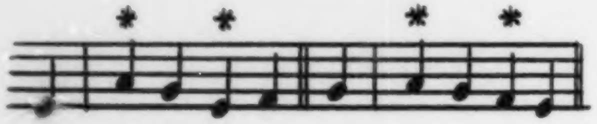
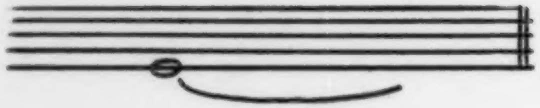
SESSIONS (HP)

C. Nonharmonic tones

Name	Abbreviation	Unaccented Accessory Tones Examples	Approached	Left	Direction of Resolution
1. Passing tone	None are used		By step	By step	Same as approach
Freer use: 1a. Single passing tone fills an interval greater than a third			By skip	By step	Same as approach
2. Neighboring tone			By step	By step	Opposite to approach
Freer use: 2a. Upper and lower combined			step-skip-step		Returns to note of approach
2b. "Nota Cambiata"			step-skip-step		Opposite to approach
2c. Neighboring tone preceded by another neighboring tone			skip-step-step		
2d. Single Neighboring Tone following or preceding a chord tone			By step By skip	By skip By step	Opposite to approach
2e. Neighboring Tone introduced between Suspension and note of resolution			By skip	By step	Opposite to approach

SESSIONS (HP)

C. Nonharmonic tones (cont.)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
		Unaccented Accessory Tones (cont.)			
3. Anticipation	None are used		By step By skip	Same note	Same note
Freer use: 3a. Indirect-Anticipates a tone in another voice in next chord			By skip	By skip	
		Accented Accessory Tones			
1. Suspension			Same note (Tied or repeated)	By step	Down or up
2. Appoggiatura			By skip By step	By step	
Pedal Point			Held tone - part of first and last chords above it.		

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SMITH & KRONE (FM)

Fundamentals of Musicianship, Book I and Book II were studied as a unit, although there are slight differences in symbolization, between the two books which will be explained below. According to the Introduction of Book I, the authors intend the material in both books to be completed in one year at the college level. This would leave the second year to cover the more advanced concepts which are not presented here, such as modulation and altered chords.

A. Figured bass

There is no use made of the tradional figured bass symbols in these books.

B. Chord symbols

Book I deals with the major key only, and primarily, only with the major triad. And while all of the diatonic triads of the major key are shown in Book I, the discussion of the minor, augmented and diminished triads is delayed until Book II. For this reason the large Roman numeral is used in Book I for all triad types, but later in Book II, when other triads and seventh chords are discussed at length, the more complete system which is outlined below is used.

1. Key indication

    a. A capital letter followed by a colon indicates a major key.
    C: B♭: F♯:

    b. A small letter followed by a colon indicates a minor key.
    c: b♭: f♯:

2. The Roman numeral chord symbol (triads)

    The quality of each triad type is shown by the Roman numeral symbol as follows:

    a. A large Roman numeral indicates a major triad.
    I V

    b. A small Roman numeral indicates a minor triad.
    ii iii

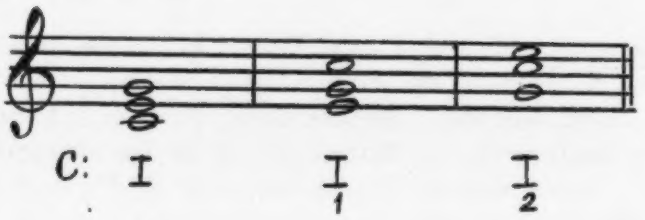
    c. A large Roman numeral with a plus sign (+) at the upper right indicates an augmented triad.
    III^{+}

    d. A small Roman numeral with a circle at the upper right indicates a diminished triad.
    vii°

3. Inversions

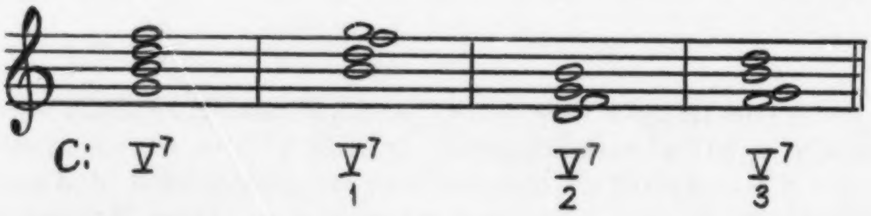
    Inversions are shown by the addition of small Arabic numerals directly below the Roman numeral. A root position chord shows only the Roman numeral; a first inversion adds a 1 below the Roman numeral; a second inversion is shown by the addition of a 2, etc.

SMITH & KRONE (FM)

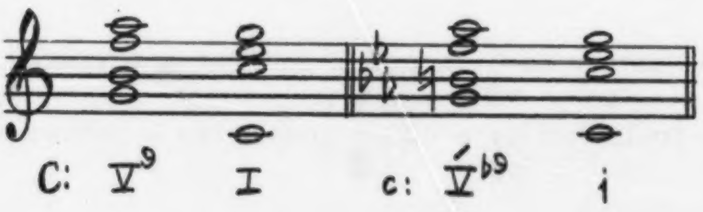


4. Seventh (ninth, etc.) chords

A seventh chord is shown by the addition of a small Arabic 7 to the upper right of the Roman numeral. The inversions are shown as previously indicated, the third inversion being indicated by the subscript 3.

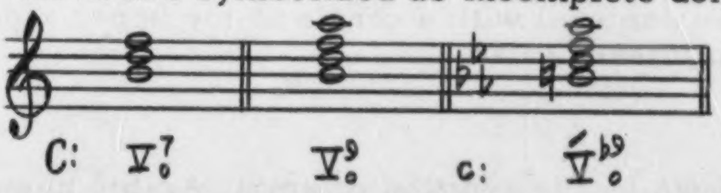


The only higher dominant discord discussed is the ninth chord. This is shown in root position on the dominant only, in both major and minor keys. (The acute inflection in minor is explained below under Altered tones.)



A footnote (Book II, page 162)[1] says that the instructor may present the inversions of the ninth chord at this point. Since the fifth is usually omitted in four-part harmony, and the ninth in the bass "assumes the character of an inharmonic tone," only the first and third inversions are suggested as being practical.

The book suggests (page 163) that "a better terminology for the vii^{o} triad would be V^{7}_{o},"[1] that is, the dominant seventh chord with the root omitted. Similarly, the diminished seventh chord and the half-diminished seventh chord are symbolized as incomplete dominant ninth chords.



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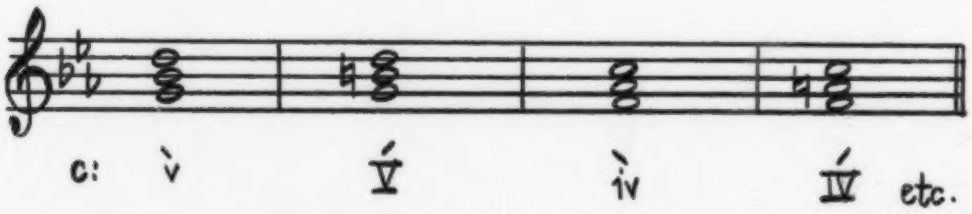
[1] FUNDAMENTALS OF MUSICIANSHIP, Book 2. Copyright 1937, 1939 by M. Witmark & Sons. Used by Permission.

5. Altered tones

The only alterations with which these books deal, are the variable tones of the minor scale. The authors give credit in a footnote (Book II, page 31)[1] to Donald N. Tweedy for originating the system of symbolization which they use to show altered tones (see Tweedy's Manual of Harmonic Technique in this study for a more comprehensive use of this symbolization). The sixth and seventh degrees of the ascending minor scale are called the acute form and symbolized: 6́, 7́; the descending melodic minor scale uses the grave form: 7̀, 6̀. The acute and grave accents are placed above the Roman numerals of those chords which contain these degrees in the minor key to show which inflection is being used.



6. Modulation

The process of modulation is not explained in Books I and II.

C. Nonharmonic tones

The nonharmonic tones are called inharmonic or unessential tones. All of the usual devices are given except the suspension and the pedal.

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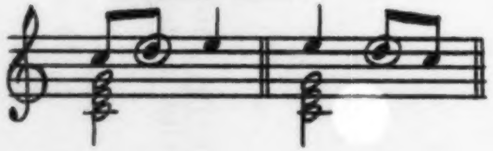
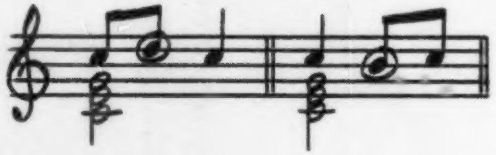
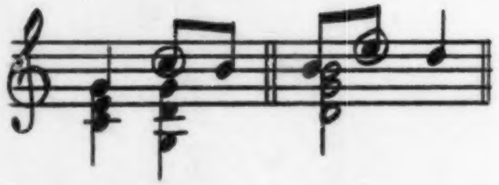
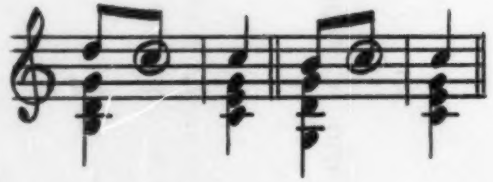
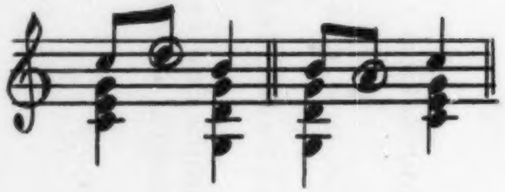
[1] FUNDAMENTALS OF MUSICIANSHIP, Book 2. Copyright 1937, 1939 by M. Witmark & Sons. Used by Permission.

SMITH & KRONE (FM)

C. Nonharmonic tones

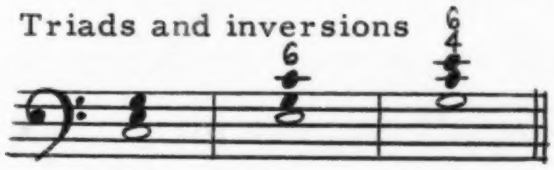
Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing Tone			By step	By step	Same as approach
Neighboring or Auxiliary Tones	aux.		By step	By step	Opposite to approach
Appoggiaturas	app.		By leap	By step	Opposite to approach
Anticipations			By step	By re-peated note	Same tone
Changing Tones or Escaped Note (echappé)	esc. n.		By step	By leap	Opposite to approach

TAPPER (FYH)

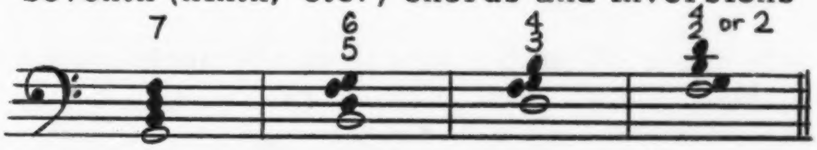
A. Figured bass

Arabic numerals are placed above the bass part.

1. Triads and inversions

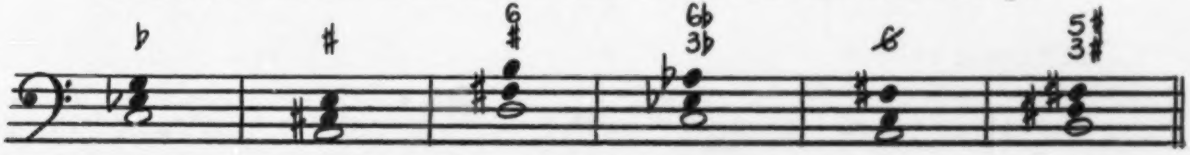


2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

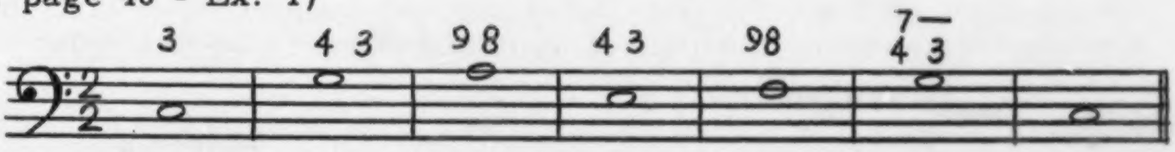
   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals usually follow the figures affected; occasionally the accidentals precede the figures.
   c. The slanting stroke (6̸) is used rarely; when it is used it indicates that a tone is raised a chromatic half-step.



4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. A dash indicates that a tone is held or repeated.

(FYH, page 40 - Ex. 1)[1]



B. Chord symbols

1. Key indication
   a. A capital letter indicates a major key; occasionally the key is written out. C C major
   b. A small letter indicates a minor key; occasionally the key is written out. c c minor

---

[1] Thomas Tapper, *First Year Harmony* (Evanston, Illinois: Summy-Birchard Publishing Co., 1959). Used by permission.

TAPPER (FYH)

2. Roman numeral chord symbol (triads)

The quality of each triad type is shown by the Roman numeral symbol as follows:

a. A large Roman numeral indicates a major triad.
   I V
b. A small capital Roman numeral indicates a minor triad.
   ii iii
c. A large Roman numeral with a plus sign (+) at the upper right indicates an augmented triad.
   III^{+}
d. A small Roman numeral with a circle at the upper right indicates a diminished triad.
   vii°

3. Inversions

The Arabic figures are placed to the lower right and to the right of the Roman numeral to show inversions.

I_6 I^6_4

4. Seventh (ninth, etc.) chords

V_7 V^6_5 V^4_3 V_2

5. Altered tones

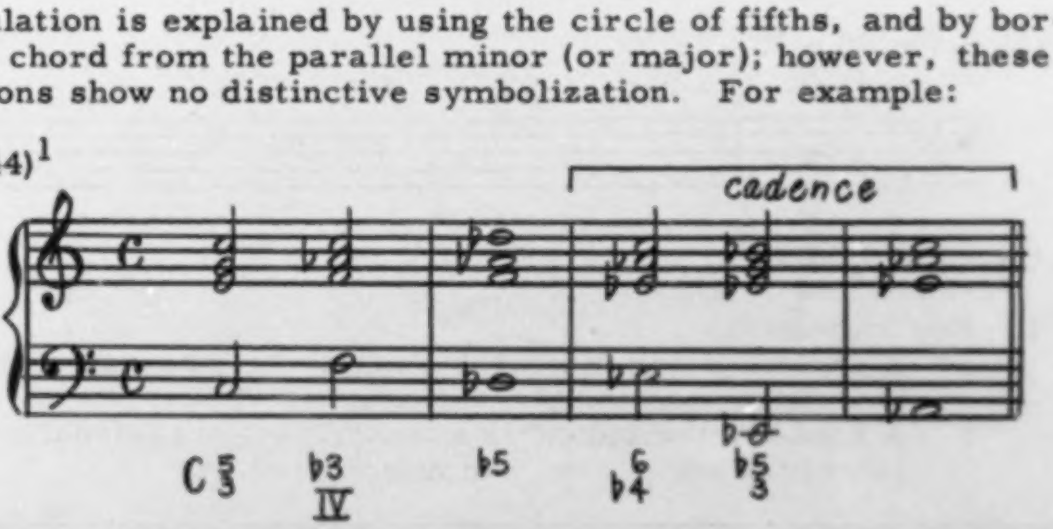
There are few examples of the symbolization of altered chords. In the few cases found (which are listed below), the alterations are expressed as they would be in figured bass.

$\mathrm{V}^{7}_{\natural}$ $\mathrm{V}^{6}_{\substack{4\\3}}$ $\mathrm{V}^{4\sharp}_{2}$ $\mathrm{V}^{4\natural}_{2}$ $\mathrm{IV}^{\flat 5}$ $\mathrm{IV}^{\flat 3}$

6. Modulation

Modulation is explained by using the circle of fifths, and by borrowing a chord from the parallel minor (or major); however, these modulations show no distinctive symbolization. For example:

(FYH, page 44)[1]



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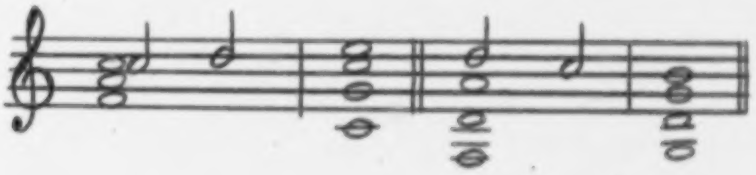
[1] Thomas Tapper, First Year Harmony (Evanston, Illinois: Summy-Birchard Publishing Co., 1959). Used by permission.

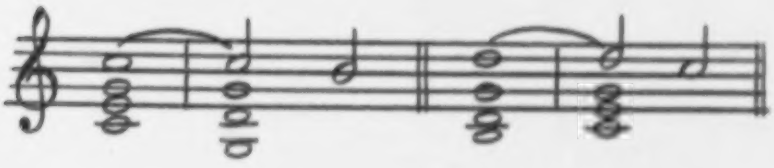
C. Nonharmonic tones

Only passing tones and suspensions are mentioned in this book; the author says that further development of this subject is reserved for second year harmony.

Passing tones



Suspensions



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THOSTENSON (FHM)

A. Figured bass

The Arabic numerals from figured bass are not used except in connection with the Roman numerals to indicate inversions.

1. Triads and inversions

   None were found.

2. Seventh (ninth, etc.) chords and inversions

   None were found.

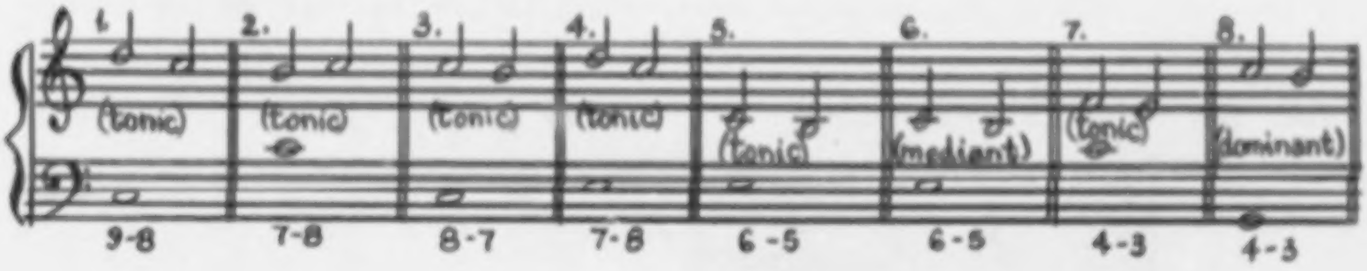
3. Altered tones

   None were found.

4. Nonharmonic tones

   The use of Arabic numerals in horizontal combination to indicate nonharmonic tones is explained and the following illustration is given:

(FHM, page 207 - First example)[1]



B. Chord symbols

1. Key indication

   a. A capital letter followed by a colon indicates a major key.
   C: B♭ : F♯ :
   b. A small letter followed by a colon indicates a minor key.
   c: b♭ : f♯ :

2. The quality of each triad type is shown by the Roman numeral symbol as follows:

   a. A capital Roman numeral indicates a major triad.
   I V
   b. A lower-case Roman numeral indicates a minor triad.
   ii iii

---

[1] Marvin S. Thostenson, Fundamentals, Harmony and Musicianship (Dubuque, Iowa: Wm. C. Brown Co., Inc., 1963). Used by permission.

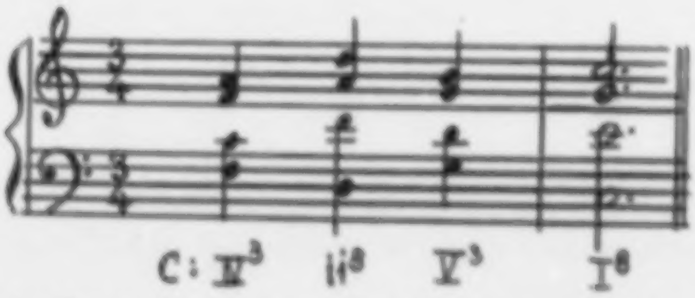
c. A capital Roman numeral with a plus sign (+) at the upper right indicates an augmented triad.
   III^+

d. A lower-case Roman numeral with a circle (o) at the upper right indicates a diminished triad.
   vii^o

3. Inversions

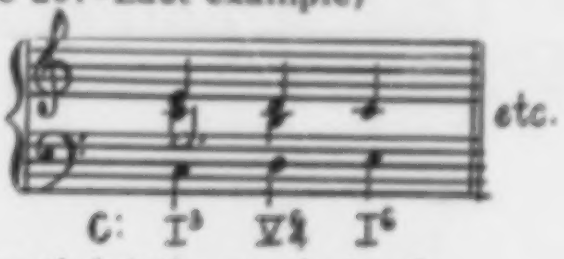
Arabic numerals are sometimes combined with the Roman numeral to show which chord member is in the soprano.

(FHM, page 202)[1]



Most often, however, the Arabic numerals refer to the chord inversion; they are usually placed to the upper right and to the right of the Roman numeral.

(FHM, page 207-Last example)[1]



4. Seventh (ninth, etc.) chords

V^7 V^6_5 V^4_3 V^2

Ninth, eleventh and thirteenth chords are discussed and the usable inversions are shown; the symbolization follows the same principles outlined above.

V^9 V^9_7 $V^7_{\substack{6\\5}}$ $V^{10}_{\substack{4\\2}}$ $V^{11}_{\substack{9\\5}}$ V^{13} $V^{11}_{\substack{6\\5}}$ $V^7_{\substack{4\\2}}$

5. Altered tones

Altered tones are not symbolized consistently. Some of the ways found are these:

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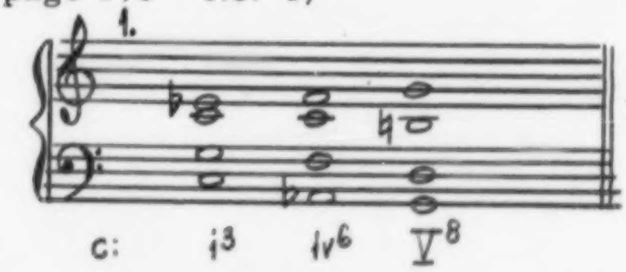
[1] Marvin S. Thostenson, Fundamentals, Harmony and Musicianship (Dubuque, Iowa: Wm. C. Brown Co., Inc., 1963). Used by permission.

THOSTENSON (FHM)

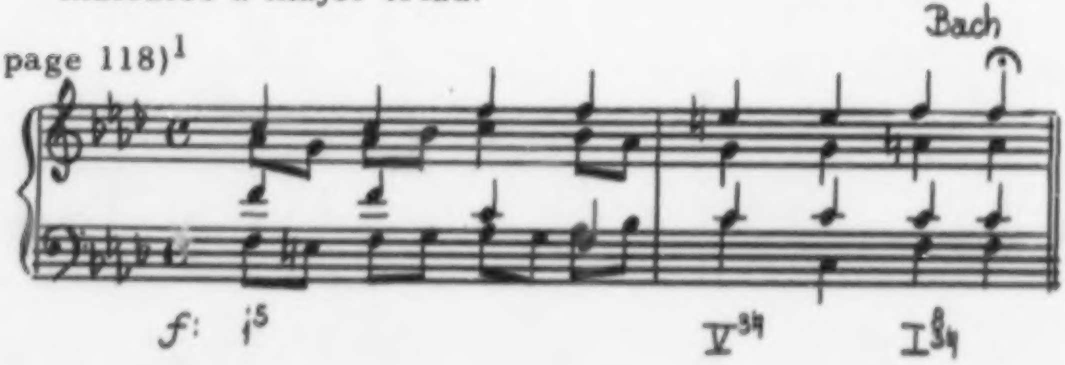
a. The system for showing triad quality (large and small Roman numerals, etc.) described above is used to show common alterations in minor. The large Roman numeral without an accidental indicates a major triad in the following example.

(FHM, page 196 - No. 1)[1]



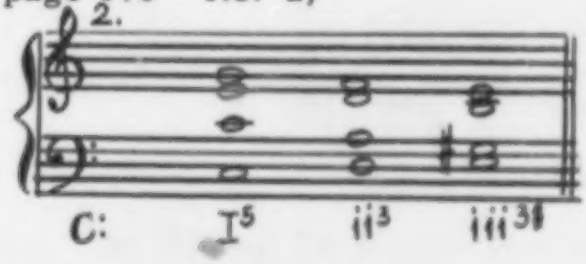
b. A large Roman numeral with a 3 followed by the accidental indicates a major triad.

(FHM, page 118)[1]



c. A small Roman numeral (showing the quality of the unaltered chord) with a 3 followed by the accidental indicates a major triad.

(FHM, page 196 - No. 2)[1]



d. The dominant seventh chord in minor is symbolized as $V^{7}_{\natural}$ and $V^{7}_{3\natural}$ (see page 230).

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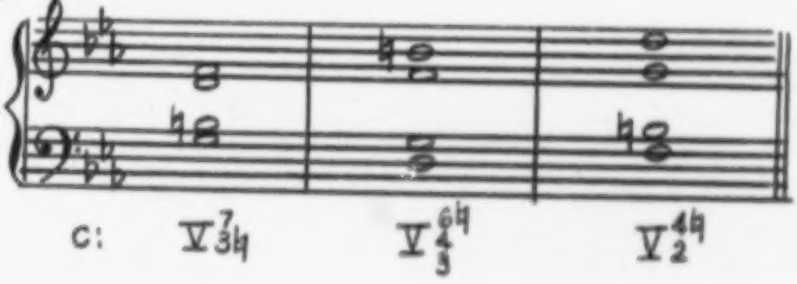
[1] Marvin S. Thostenson, Fundamentals, Harmony and Musicianship (Dubuque, Iowa: Wm. C. Brown Co., Inc., 1963). Used by permission.

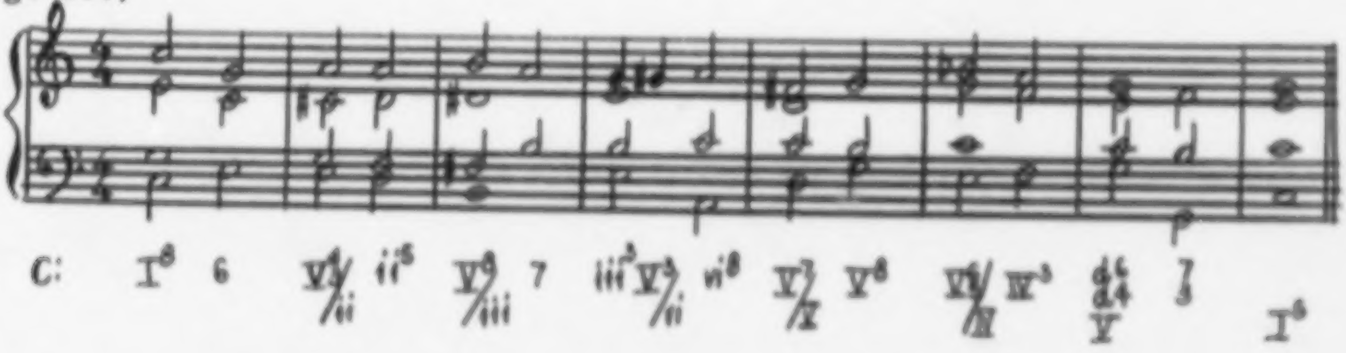
e. Sometimes the alteration is shown by the inversion figures as in the example below, and sometimes it is not (see page 235).

(FHM, page 233)[1]



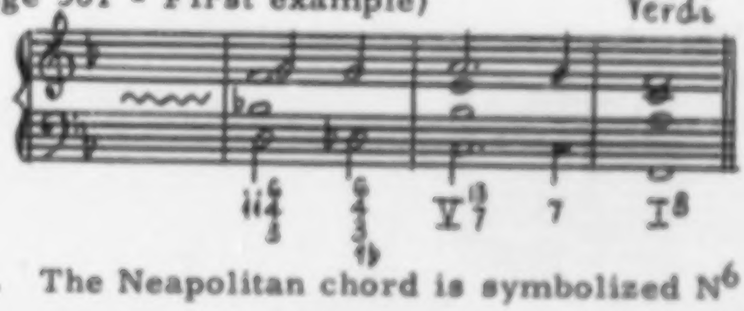
f. Secondary dominants are symbolized V^7/V; note in the next example that the altered notes in inverted chords are not shown by the Arabic figures.

(FHM, page 269)[1]



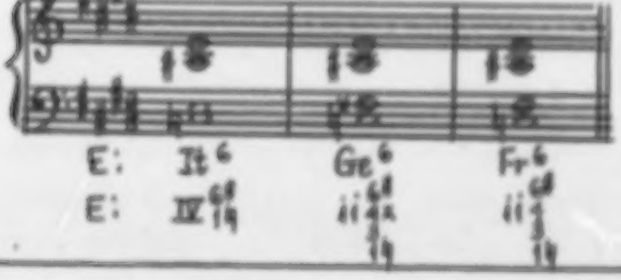
g. In this example an altered bass note is shown as 1♭ .

(FHM, page 301 - First example)[1]



h. The Neapolitan chord is symbolized N^6 (or N^3, N^8, etc.)

i. The augmented sixth chords are symbolized two ways:



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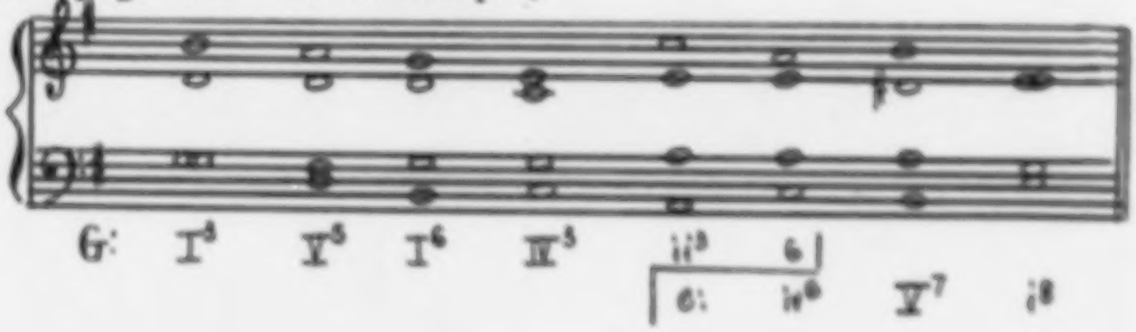
[1] Marvin S. Thostenson, Fundamentals, Harmony and Musicianship (Dubuque, Iowa: Wm. C. Brown Co., Inc., 1963). Used by permission.

THOSTENSON (FHM)

6. Modulation

While three types of modulation are described ("by direct pivot chord, by two common tones pivot, by one common tone pivot" - page 256), all are symbolized similarly.

(FHM, page 260 - First example)[1]



C. Nonharmonic tones

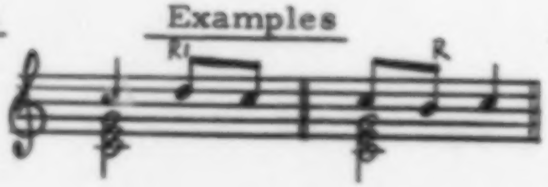
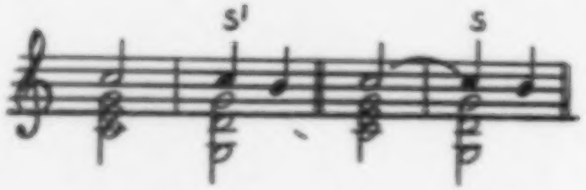
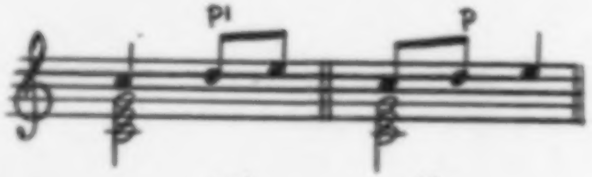
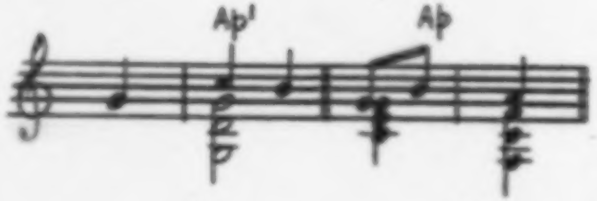
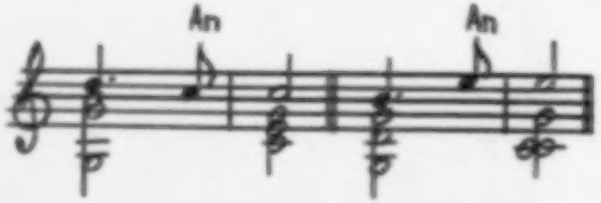
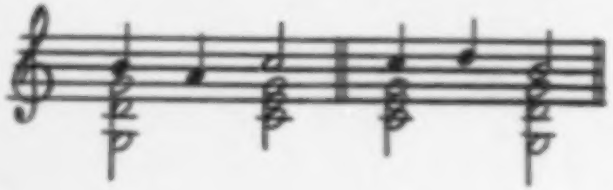
Returning tones, suspensions, passing tones and appoggiaturas are described as accented or unaccented; to symbolize this, the accent is shown by the addition of the accent mark to the letter symbolizing the nonharmonic tone (P or P'); the pedal point is not mentioned.

---

[1] Marvin S. Thostenson, Fundamentals, Harmony and Musicianship (Dubuque, Iowa: Wm. C. Brown Co., Inc., 1963). Used by permission.

THOSTENSON (FHM)

C. Nonharmonic tones

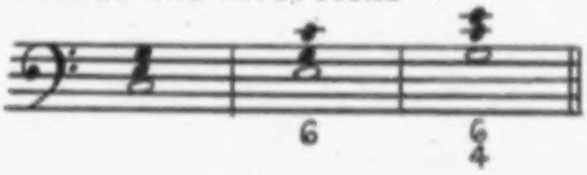
Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Returning tone	R', R		By step	By step	Opposite to approach
Suspension	S', S		By tied or repeated tone	By step	Up or down
Passing tone	P', P		By step	By step	Same as approach
Appoggiatura	Ap', Ap		By skip or initial tone	By step	
Anticipation	An		By step or skip	By repeated note	Same tone
Escape tone	E		By step	By skip	

TISCHLER (PH)

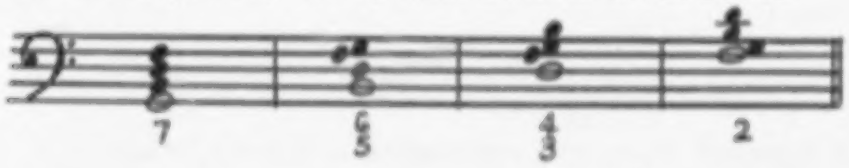
A. Figured bass

Arabic numerals are placed below the bass part.

1. Triads and inversions

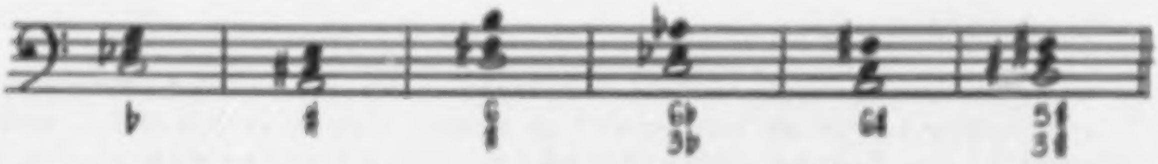


2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

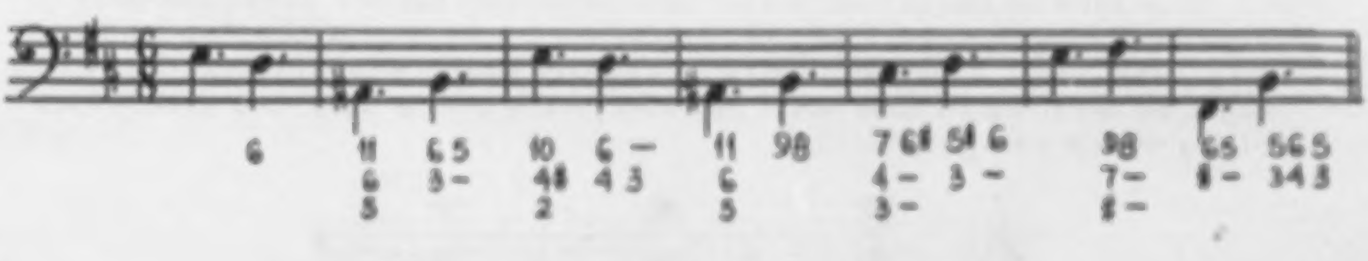
   a. An accidental without a figure refers to the third above the bass tone.
   b. Accidentals follow the figures affected.
   c. No slanting or vertical strokes are used.



4. Nonharmonic tones

   a. A nonharmonic tone in an upper part is shown by the spacing and alignment of the figures.
   b. A dash indicates that a tone is held or repeated.

(PH, page 162 - Ex. d.)[1]



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[1] Hans Tischler, Practical Harmony (Boston: Allyn and Bacon, Inc., 1964). Used by permission.

TISCHLER (PH)

B. Chord symbols

1. Key indication

a. A capital letter indicates a major key.
C B♭ F♯

b. A small letter indicates a minor key.
c b♭ f♯

2. The Roman numeral chord symbol (triads)

The quality of each triad type is shown by the Roman numeral symbol as follows:

a. A large Roman numeral indicates a major triad.
I V

b. A small Roman numeral indicates a minor triad.
ii iii

c. A large Roman numeral followed by a plus sign (+) indicates an augmented triad.
III^+

d. A small Roman numeral with a circle at the upper right indicates a diminished triad.
vii^o

3. Inversions

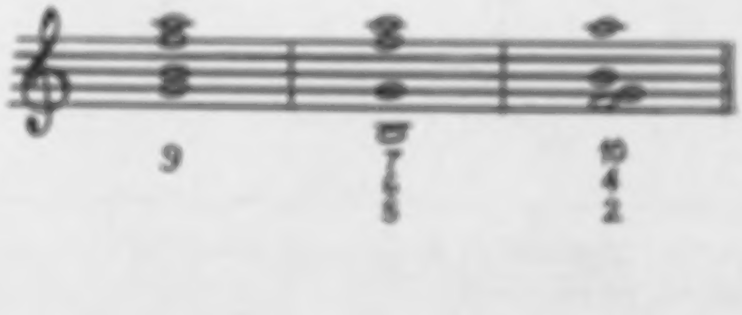
The Arabic numerals from figured bass are combined with the appropriate Roman numeral. A single figure is placed to the lower right of the Roman numeral; two or more figures are placed to the right.

I_6 ii^6_4 III^+_6 vii^o_6

4. Seventh (ninth, etc.) chords

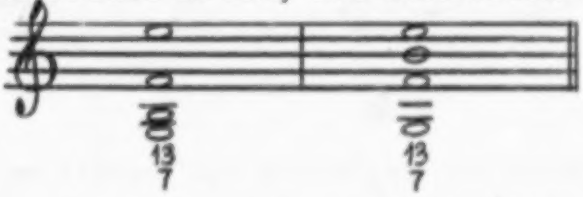
V_7 II^6_5 $V^{10}_{\substack{4\\2}}$

Tischler is much more specific about the higher dominant dischords than are most authors; he devotes a part of a chapter to V_9, V_{11}, and V^{13}_7. Since the ninth is usually in the soprano and the fifth must be omitted in four-part harmony, their are only two inversions of V_9 which are practical:

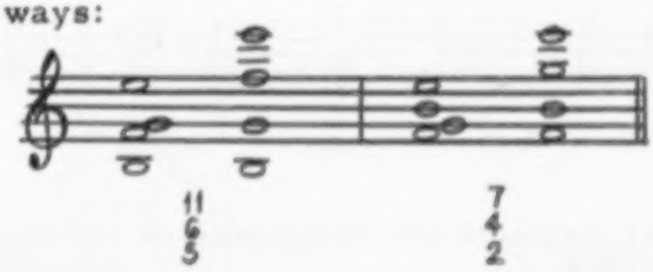


TISCHLER (PH)

The V_{11} and V_{13} contain six and seven tones respectively and have little use in four-part harmony. The one common form of the thirteenth chord in four parts is called a V^{13}_{7} by Tischler. In root position it occurs in only two distributions:

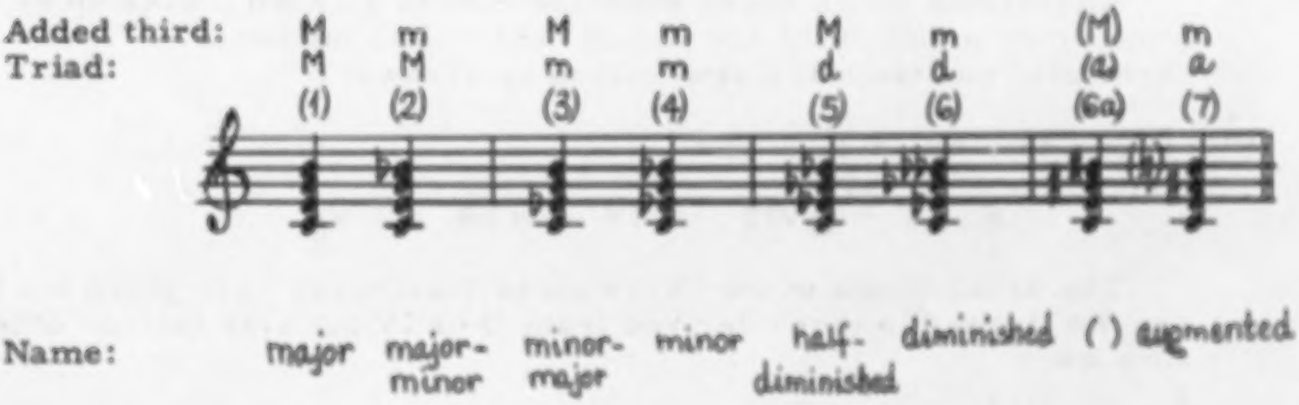


There are only two inversions and each of these may be distributed in two ways:



These examples have been given here in some detail because of the unusualy thoroughness with which they are treated in this book.

Tischler suggests a system for naming seventh chords based upon the kind of triad, and the kind of added third. This is mentioned here since it is somewhat similar to the system used by McHose and others, although the results are different, since McHose symbolizes the kind of triad, and the kind of seventh. In some cases the name of the seventh chord is the same in both systems, but in other cases it is not. (see page 171)[1]


Added third:
M
m
M
m
M
m
(M)
m
Triad:
M
M
m
m
d
d
(a)
a
(1)
(2)
(3)
(4)
(5)
(6)
(6a)
(7)
Name:
major
major-minor
minor-major
minor
half-diminished
diminished
( ) augmented

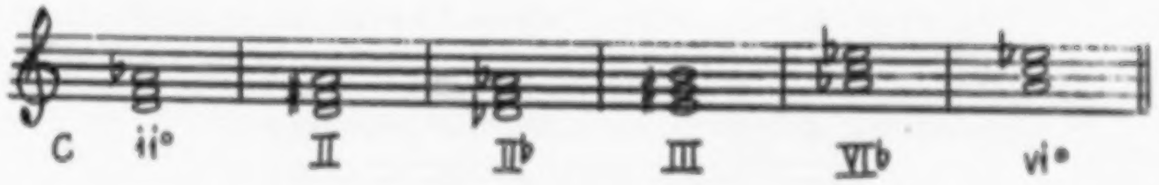
5. Altered tones

Simple chromatic alterations are shown by the quality of the triad as explained above. The altered root of a chord is indicated by an accidental which follows the Roman numeral.

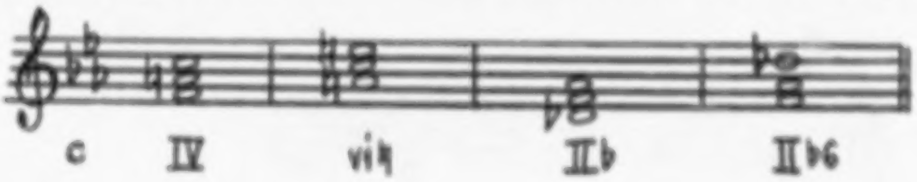
---

[1] Hans Tischler, Practical Harmony (Boston: Allyn and Bacon, Inc., 1964). Used by permission.

TISCHLER (PH)

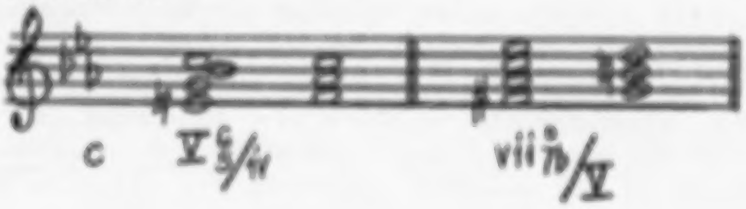


These chromatic variants are explained as "modal mixtures," that is, chords which might occur in different modes constructed on the same tonic.



Note that in the above example the Neapolitan chord is II♭, and the Neapolitan six-chord is II♭6.

The second important source of altered chords is the "secondary dominant," which precedes any diatonic chord in a key except I. These are symbolized:



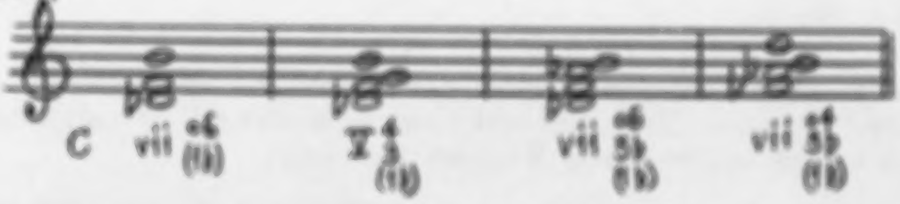
Alterations which occur when the root of a chord moves up or down a major or minor third are called "chromatic mediants." These chromatic mediants are symbolized by arrows:

(PH, page 252 - Ex. a.)[1]

E I → VI♮ → IV → III♮ - V - I

The usual forms of the "augmented six-chords" are given but these are not limited to those derived from II or IV but also include others such as:

(PH, page 275)[1]



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[1] Hans Tischler, Practical Harmony (Boston: Allyn and Bacon, Inc., 1964). Used by permission.

Tischler enumerates other chromatic alterations made to triads, dominant "seven-chords" and diminished "seven-chords" but the symbolization is similar to that used above, i. e., Arabic numerals derived from figured bass with the necessary accidentals following the figures.

6. Modulation

Modulation is treated under three large headings, diatonic, chromatic, and enharmonic. There are two types of modulation, (1) those made with the help of a modulator and (2) those achieved by direct skip. Modulation by direct skip implies a direct beginning in a new key which is then confirmed by a cadence. When a modulator is used the modulation will be one of three types:

1. diatonic - involving a pivot chord common to two keys.
2. chromatic - in which there is no pivot chord but some part moves a chromatic half-step.
3. enharmonic - in which the pivot chord involves the enharmonic spelling of one or more of its members.

Relative major and minor keys are considered to be so closely related that no modulation is recognized in going from one to the other.

In every modulation made with the help of a modulator three operations are necessary (see page 189)[1]:

Operation 1. Establishment of the first key
Operation 2. Modulator
Operation 3. Establishment of the second key

Tischler has a system of describing the direction and degree, or distance, of every modulation. The degrees are gotten from the circle of fifths and are the same as the number of accidentals changed. A first-degree modulation involves one more or less accidental in the key signatures. The direction of a modulation is determined by whether the second tonic is a fifth higher of lower than the first tonic. From C to G would be called a first-degree modulation up; from G to C a first-degree modulation down. Since relative major and minor keys share the same signature, the degree of modulation, up or down, must also include the relative keys. The types of first-degree modulations are symbolized as follows (see page 193)[1]:

---

[1] Hans Tischler, Practical Harmony (Boston: Allyn and Bacon, Inc., 1964). Used by permission.

TISCHLER (PH)

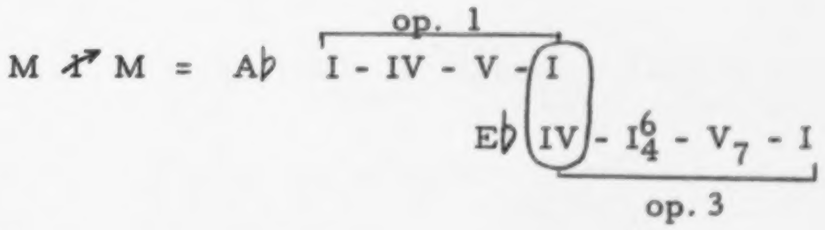
1. M $\overset{1}{\nearrow}$ M = C - G
2. M $\overset{1}{\nearrow}$ m = C - e
3. M $\overset{1}{\searrow}$ M = G - C
4. m $\overset{1}{\searrow}$ M = e - C
5. m $\overset{1}{\nearrow}$ M = a - G
6. m $\overset{1}{\nearrow}$ m = a - e
7. M $\overset{1}{\searrow}$ m = G - a
8. m $\overset{1}{\searrow}$ m = e - a

Modulations of other degrees would involve a greater number of changed accidentals in the circle of fifths, e.g., a modulation three degrees up would be, m $\overset{3}{\nearrow}$ m = a - f♯.

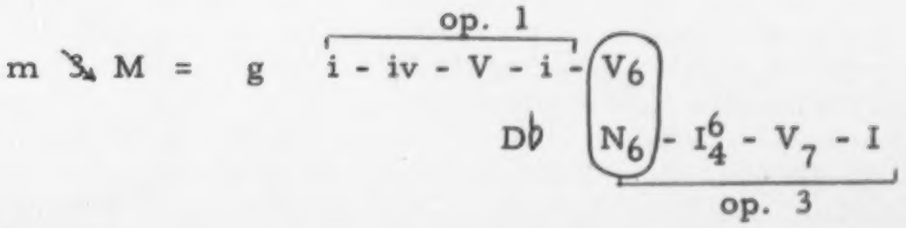
The modulation is symbolized by the following:

1. The lines of Roman numerals are staggered.
2. The dual interpretation of the pivot chord is indicated by vertical alignment.
3. Operations 1 and 3 are marked by brackets, and Operation 2, the modulator, is enclosed in a circle.

(PH, page 195 - Ex. 1a.)[1]



(PH, page 225)[1]


m $\overset{3}{\searrow}$ M = g
op. 1
i - iv - V - i - V_6
D♭ N_6 - I^6_4 - V_7 - I
op. 3

C. Nonharmonic tones

Tischler groups nonharmonic tones into those which are unstressed and those which are stressed. The unstressed devices such as the passing tone and the turning tone may be approached and left by step (strict), or may be either - but not both - approached or left by skip (free). He says the only really "free" nonharmonic tone, both approached and left by skip, is one which starts to resolve to a chord tone by step but then substitutes another note in the chord for this intended resolution. This he terms "resolution by substitution."

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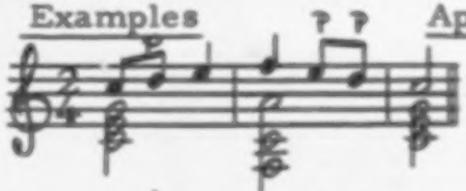
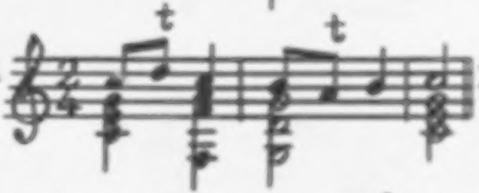
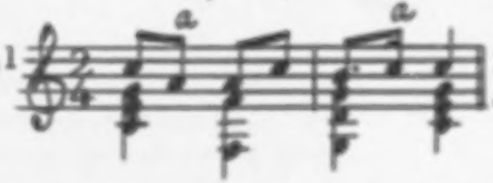
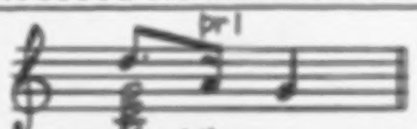
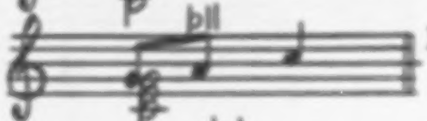
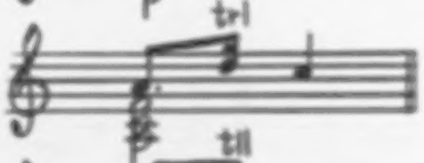
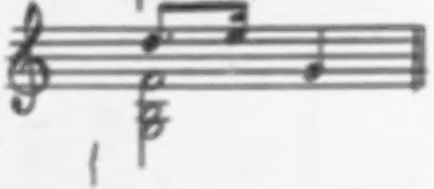
[1] Hans Tischler, Practical Harmony (Boston: Allyn and Bacon, Inc., 1964). Used by permission.

TISCHLER (PH)

C. Nonharmonic tones

Name	Abbreviation		Examples	Approached	Left	Direction of Resolution
			Strict, Unstressed Nonharmonic Tones			
passing tone	p	(page 89)[1]		By step	By step	Same as approach
turning tone	t	(page 90)[1]		By step	By step	Opposite to approach
anticipation	a	(page 90)[1]		By step or skip	By repeated note	Same note
			Free, Unstressed Nonharmonic Tones			
passing tone reached by leap	prl	(page 139)[1]		By skip	By step	Same as approach
passing tone left by leap	pll			By step	By skip	Same as approach
turning tone reached by leap	trl			By skip	By step	Opposite to approach
turning tone left by leap (échappée)	tll			By step	By skip	Opposite to approach

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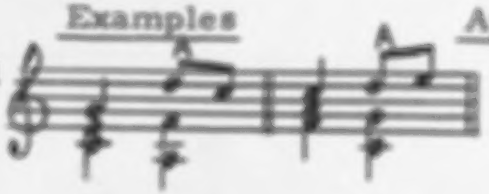
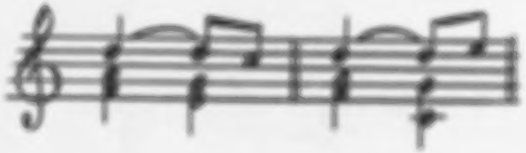
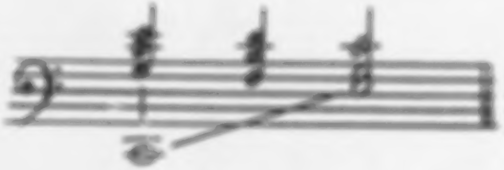
[1] Hans Tischler, Practical Harmony (Boston: Allyn and Bacon, Inc., 1964). Used by permission.

TISCHLER (PH)

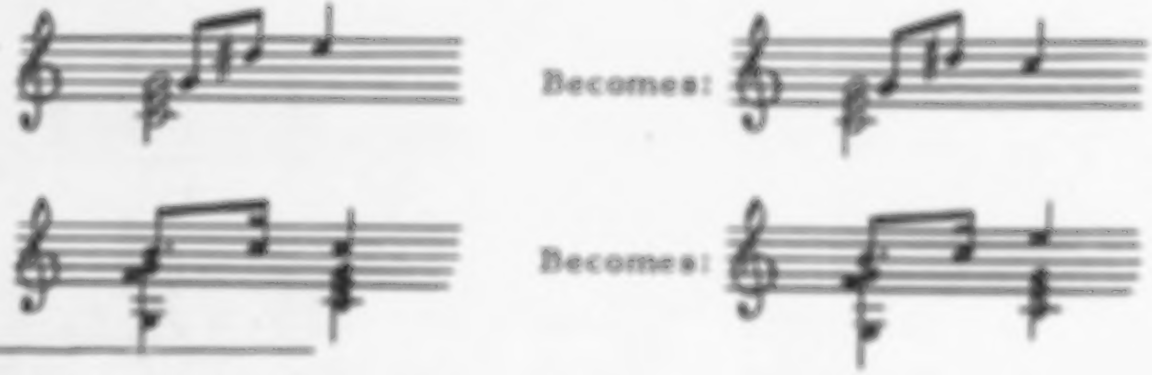
C. Nonharmonic tones (cont.)

Stressed Nonharmonic Tones

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
appoggiatura	A (page 144)[1]		By skip or step	By step	Opposite to approach and same as approach
suspension (retardation)	S		By prolongation	By step	Down or up
pedal point	P (page 145)[1]		By prolongation	By prolongation	

A "free," unstressed nonharmonic tone both reached and left by skip. The usual resolution is so well understood that another chord tone may be substituted for it. This is termed, "resolution by substitution."

(page 139)[1]



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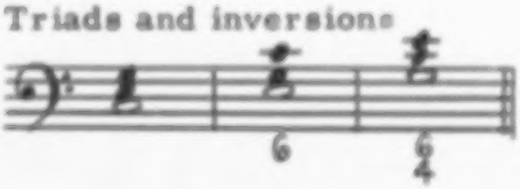
[1] Hans Tischler, Practical Harmony (Boston: Allyn and Bacon, Inc., 1964). Used by permission.

TWEEDY (MHT)

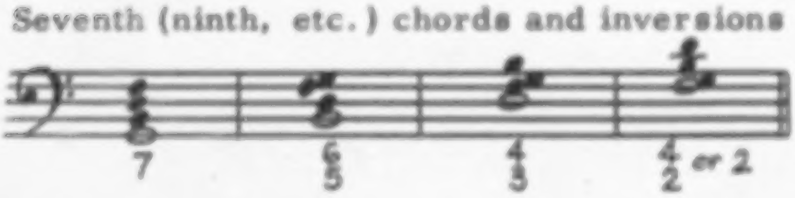
A. Figured bass

In Part I. Preliminaries, the author gives the figured bass indications for triads and seventh chords. No indications are given for the symbolization of altered tones or nonharmonic tones in figured bass. After this one appearance, figured bass is not used in the remainder of the book; there are no figured bass exercises for the student to solve and the analyses under the examples and exercises are all in terms of the Roman numeral.

1. Triads and inversions



2. Seventh (ninth, etc.) chords and inversions



3. Altered tones

   None are given.

4. Nonharmonic tones

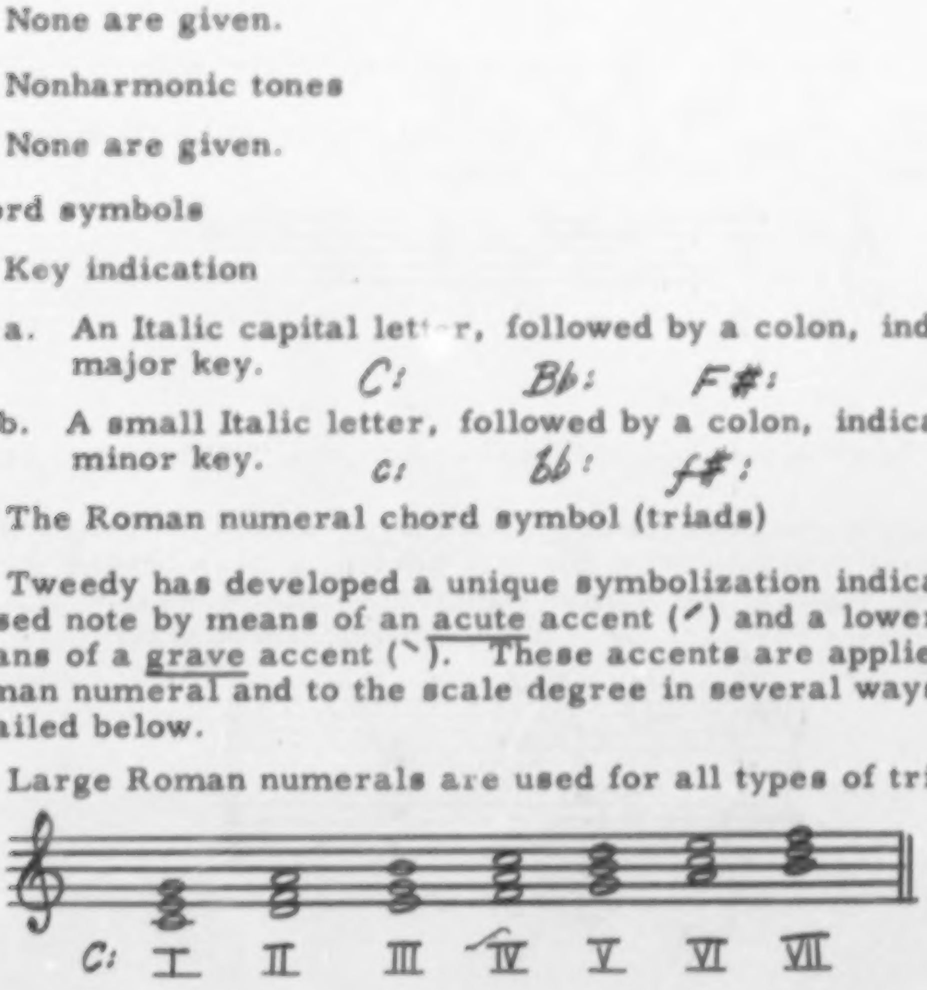
   None are given.

B. Chord symbols

1. Key indication
   - a. An Italic capital letter, followed by a colon, indicates a major key. C: Bb: F#:
   - b. A small Italic letter, followed by a colon, indicates a minor key. c: bb: f#:
2. The Roman numeral chord symbol (triads)

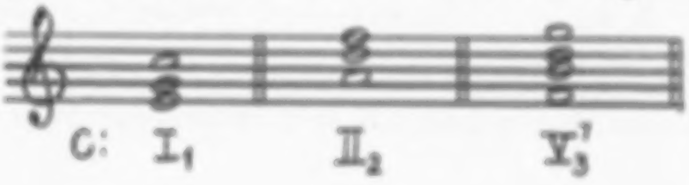
Tweedy has developed a unique symbolization indicating a raised note by means of an acute accent (ˊ) and a lowered tone by means of a grave accent (ˋ). These accents are applied to the Roman numeral and to the scale degree in several ways which are detailed below.

Large Roman numerals are used for all types of triads.



3. Inversions

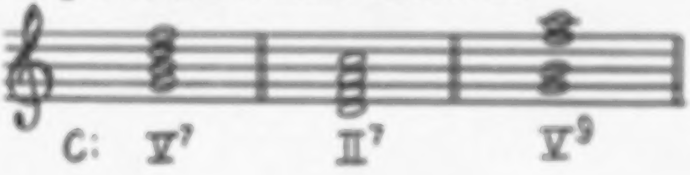
The first, second and third inversions of chords are shown by the subscripts 1, 2 or 3 added to the lower right of the Roman numeral.


C:
I_1
II_2
V^7_3

The above symbols are spoken, "One-one," "Two-two," and "Five-seven-three."

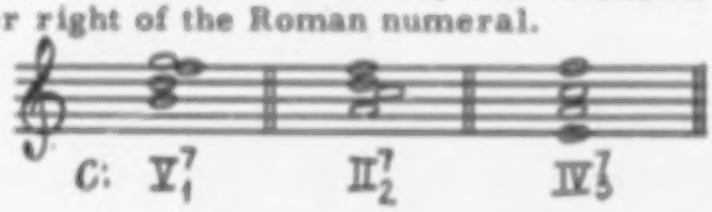
4. Seventh (ninth, etc.) chords

To indicate seventh or ninth chords a superscript of 7 or 9 is added to the upper right of the Roman numeral.


C:
V^7
II^7
V^9

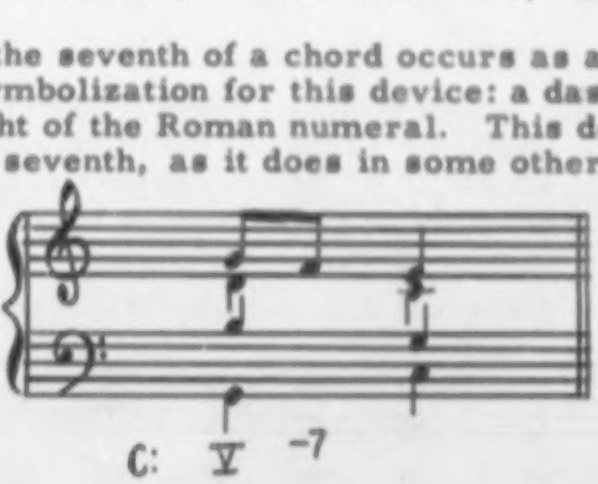
Spoken: "Five-seven," "Two-seven," and "Five-nine."

When the seventh chord is inverted, this is shown by a subscript added to the lower right of the Roman numeral.


C:
V^7_1
II^7_2
IV^7_3

Spoken: "Five-seven-one," "Two-seven-two," and "Four-seven-three."

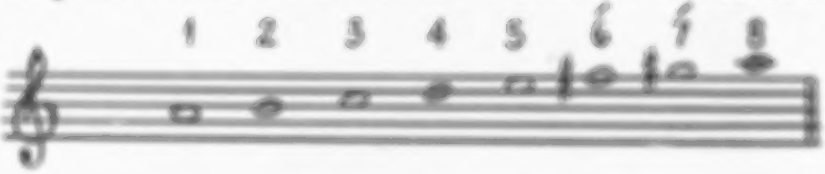
Frequently the seventh of a chord occurs as a passing tone. Tweedy has a special symbolization for this device: a dash before the small 7 to the upper right of the Roman numeral. This does not indicate an altered (minor) seventh, as it does in some other texts.



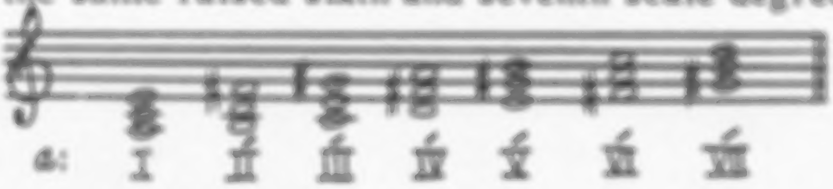
5. Altered tones

An acute accent indicates a raised tone, a grave accent indicates a lowered tone. These accents are applied in several ways:

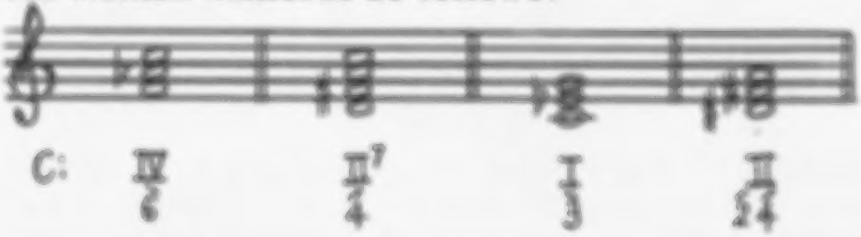
a. To indicate a raised scale degree in minor, the acute accent is placed above the Arabic numeral which shows that degree.



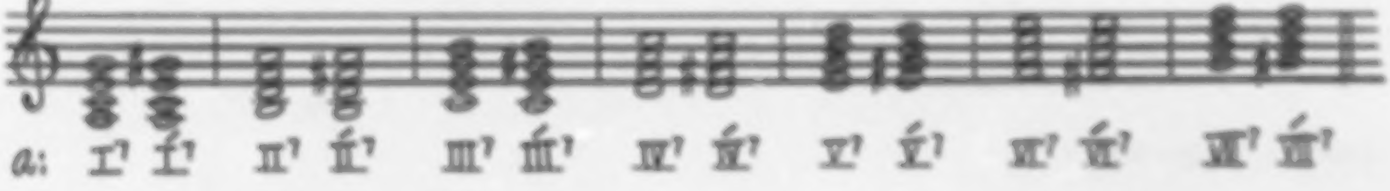
b. The acute accent is placed above the Roman numeral to show the same raised sixth and seventh scale degrees in chords.



c. Other, less frequent, altered scale degrees are shown under the Roman numeral as follows:



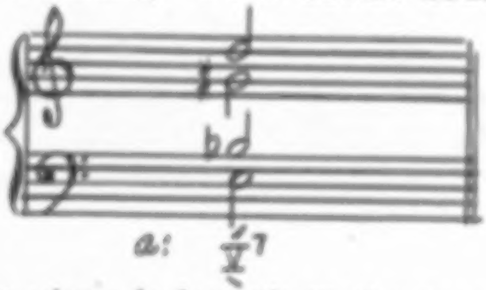
d. The seventh chords made from the three forms of the minor scale are indicated:



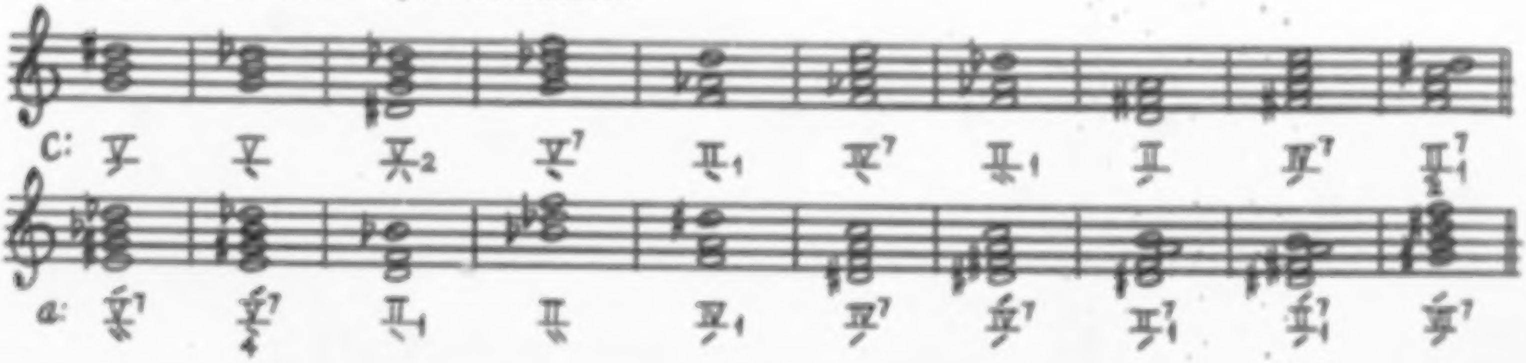
e. In chords employing more extensive chromatic alteration than those made from the three forms of the minor scale, it is necessary to know what are the most commonly altered tones. Although Tweedy discusses and gives examples of the common alterations, there is no logical plan apparent so that the student must memorize the appropriate symbol for each chord.

TWEEDY (MHT)

In speaking, the symbolization of altered chords becomes more complicated since Tweedy recommends that the altered sixth and seventh degrees of the minor scale be called "acute," and all other tones chromatically raised are to be called "sharp," while those chromatically lowered are to be called "flat." Thus, in minor, the following chord is called, "Five-seven-acute with a flat."



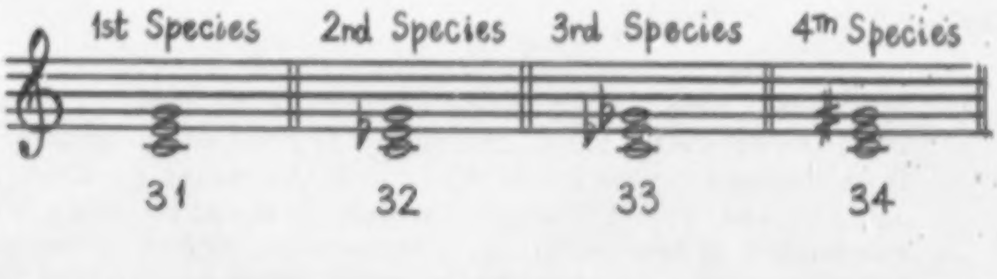
The examples given below show the more commonly found altered chords and their symbolization.



f. In addition to this system of expressing altered chords with a Roman numeral and acute and grave accents, Tweedy says that there are some chords with such extensive alterations that their function in a key is obscure. He assigns them the status of "color-chords" and recommends that they be analyzed in terms of their sonority rather than their function. They are assigned one of the numbers given below, which describes the sonority present, but they are not given a Roman numeral designation.

(MHT, page 33)[1]

Triads:



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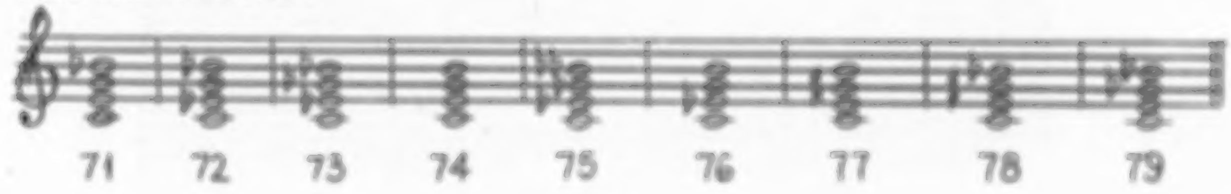
[1] Donald Tweedy, Manual of Harmonic Technique (Boston: Oliver Ditson Co., 1928). Used by permission.

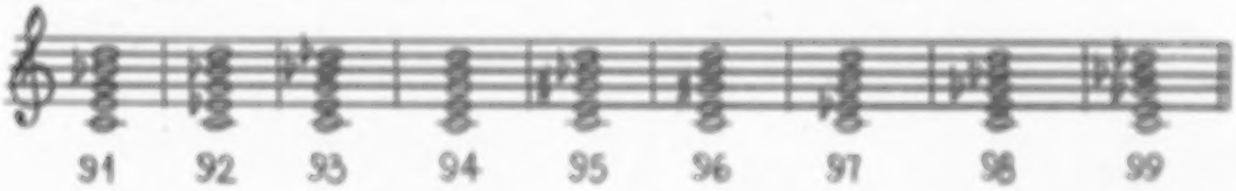
TWEEDY (MHT)

(MHT, page 33)[1]

Seventh-chords:



Ninth-chords:



Inversions of "color-chords" may be represented in the same manner as triads, e.g., $\frac{76}{3}$ means a "Sixth-species seventh-chord in third inversion."

A practical example showing this symbolization will be found below under "Modulation."

6. Modulation

Modulation is discussed under three headings:

a. Complete diatonic modulation through triads.
b. Complete diatonic modulation through seventh-chords.
c. Modulation by means of pivotal tones.

"Complete modulation" is used to differentiate it from "transient modulation"; transient modulation occurs "when the chord of resolution in the new key is simultaneously an active chord in the old, pivoting us back immediately into the tonality from which we have just come." (page 27)[1]

The common chord is sometimes shown by a dual analysis, as in the following example, but more often the new key is shown without the common chord receiving a dual analysis.

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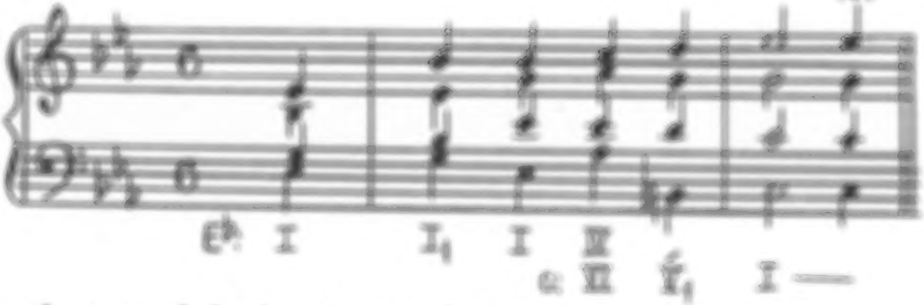
[1] Donald Tweedy, Manual of Harmonic Technique (Boston: Oliver Ditson Co., 1928). Used by permission.

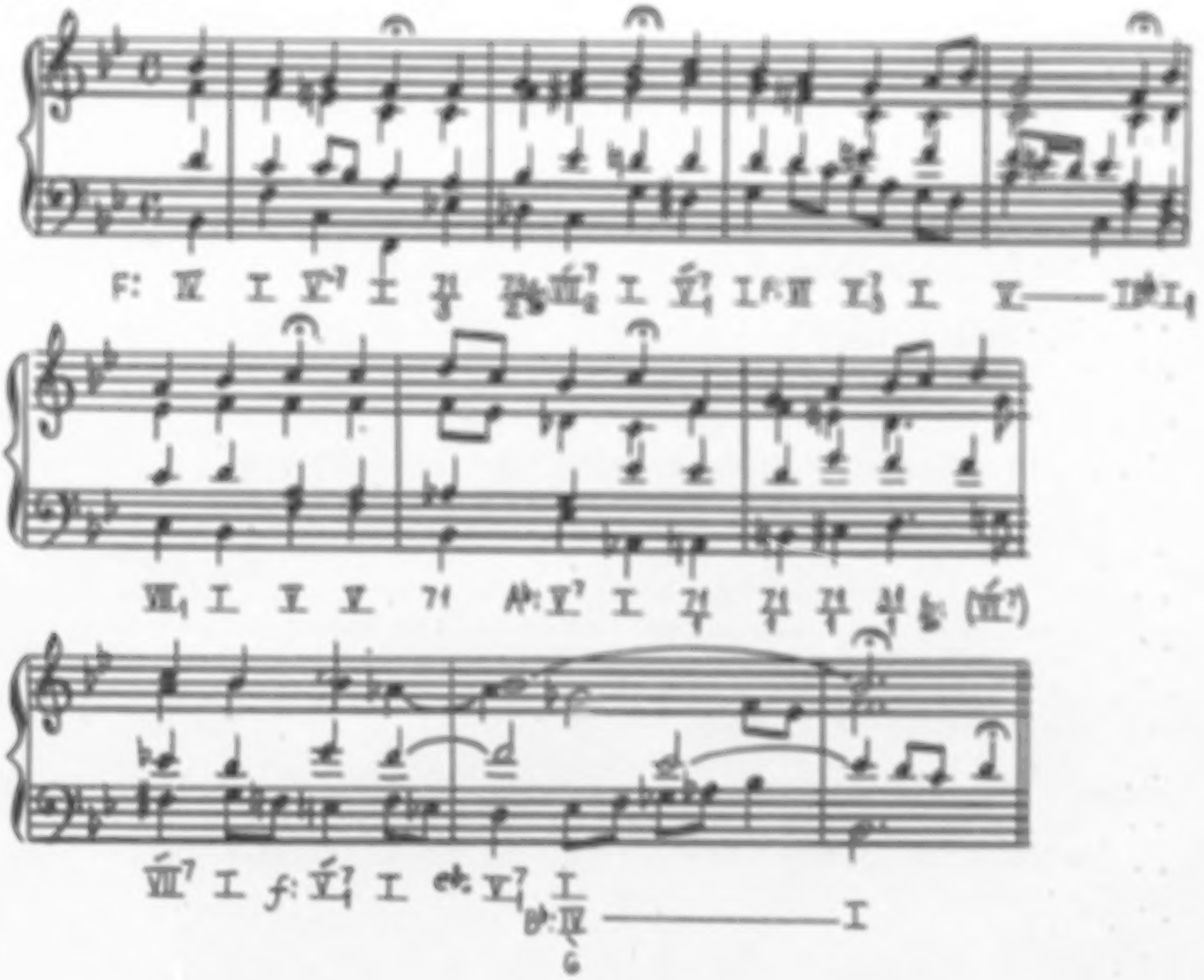
TWEEDY (MHT)

(MHT, page 28 - 1st phrase)[1]



Most often modulation is symbolized as in the following example where the dual interpretation of the pivot chord is used only once. This example also shows Tweedy's use of "color-chords" in an analysis.

(MHT, page 34)[1]



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[1] Donald Tweedy, Manual of Harmonic Technique (Boston: Oliver Ditson Co., 1928). Used by permission.

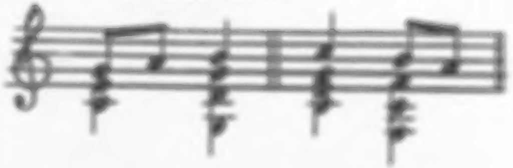
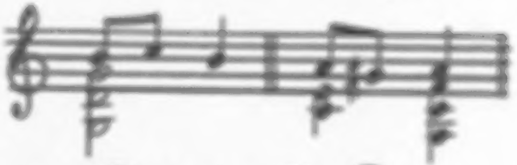
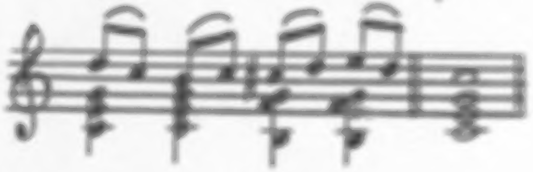
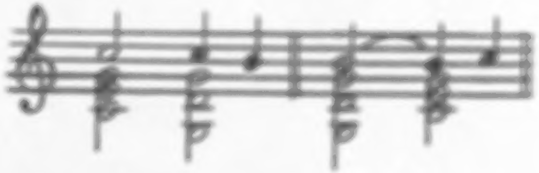
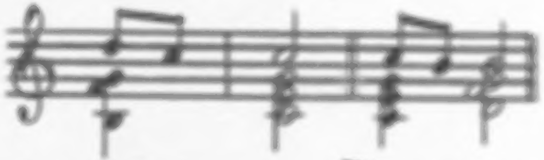
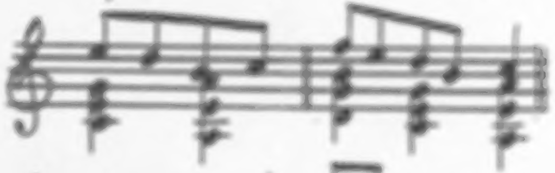
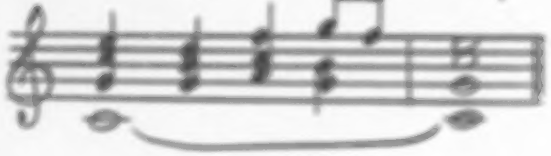
C. Nonharmonic tones

The ornamental non-chord tones are termed "inharmonic or unessential tones." Passing-tones intervene between one chord tone and another; auxiliary-tones, on the other hand, are employed in association with the chord-tone, e.g., alternating with it, preceding or following it. Both accented and unaccented passing-tones are shown, but the examples of auxiliary-tones show these occurring only unaccented. He says that the appoggiatura might be called an unprepared auxiliary-tone. A suspension is also called a "retard"; it may resolve up or down and may be a tied or repeated note. The term "escape tone" is not used, although some of the examples of changing-tones which he gives show skips away from a dissonant note.

The pedal is discussed separately and much later in the book under the term "organ-point."

TWEEDY (MHT)

C. Nonharmonic tones

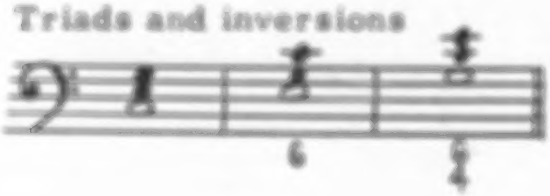
Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing tone (Unaccented and accented)	None are used		By step	By step	Same as approach
Auxiliary tone (Unaccented only)			By step	By step	Opposite to approach
Appoggiatura (Accented only)			By skip or step	By step	Opposite to approach
Suspension (Retard)			By tied or repeated note	By step	Up or down
Anticipation			By step	As repeated note	Same tone
Changing-tones			By step or skip	By step or skip	
Organ-point			Held tone		

WEDGE (AH)

A. Figured bass

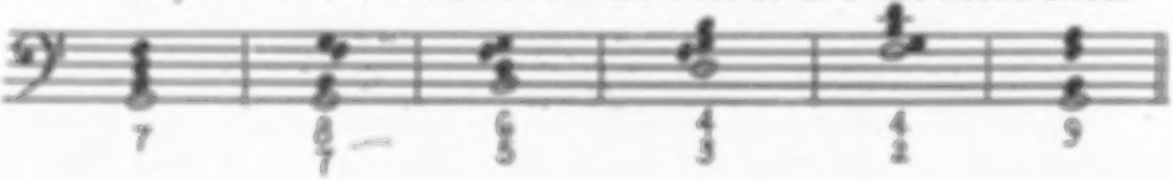
Arabic numerals are placed below the bass part.

1. Triads and inversions



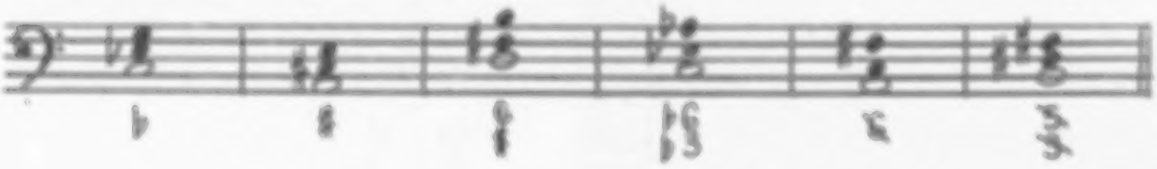
2. Seventh (ninth, etc.) chords and inversions

Seventh chords in all inversions are used. The figuration $\begin{smallmatrix}8\\7\end{smallmatrix}$ is used to indicate a seventh chord with root doubled and fifth omitted. The author says that ninth chords seldom appear inverted in four-part harmony. Eleventh and thirteenth chords are not mentioned.



3. Altered tones

a. An accidental without a figure refers to the third above the bass tone.
b. Accidentals precede the figures affected.
c. The slanting stroke ($\not 6$) indicates that a tone is raised a chromatic half-step.



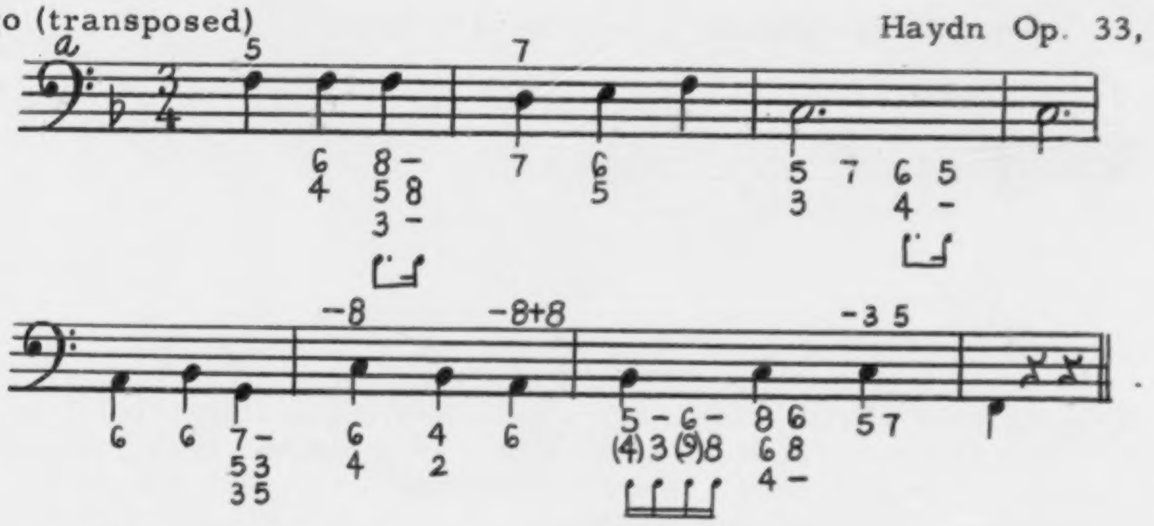
4. Nonharmonic tones

a. Nonharmonic tones are usually shown by spacing and vertical alignment; however, note the rhythmic pattern appearing under the figures in the next example.
b. A dash after a figure indicates that it is held or repeated.
c. Two like figures $\binom{3}{3}$ indicate doubling

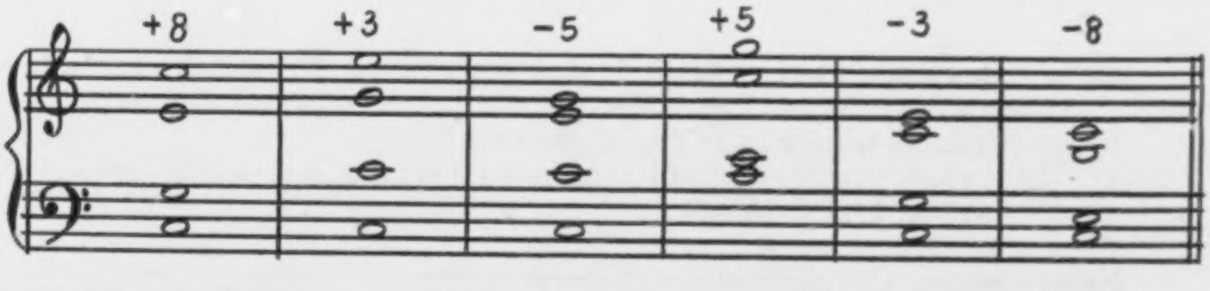
WEDGE (AH)

(AH, page 142 - 4a)[1]

Largo (transposed) Haydn Op. 33, No. 2



Wedge also utilizes a system of Arabic numerals above a given bass part to indicate the soprano position of the chord. A plus sign (+) indicates that the soprano is on the higher of the two possible tones in the voice range; a minus sign (-) indicates that it is on the lower. For example:



B. Chord symbols

Wedge uses two kinds of symbolization for chords, one based upon letters, the other using the large Roman numerals. He also has two systems for indicating inversions. These are detailed below.

1. Key indication

   a. A capital letter followed by the word major indicates a major key.
      D-major
   b. A small letter followed by the word minor indicates a minor key.
      d-minor

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[1] George A. Wedge, Applied Harmony, Book I (New York: G. Schirmer, Inc., 1930). Used by permission

WEDGE (AH)

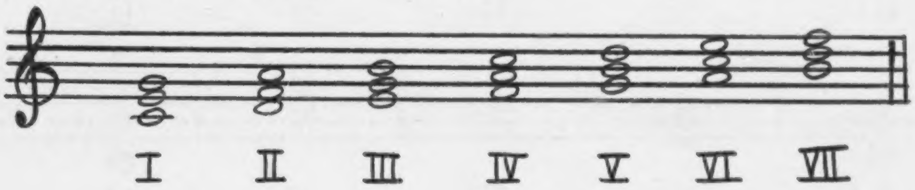
2a. The letter chord symbol (triads)

A capital letter indicates a major triad.
C B♭ F♯
A small letter indicates a minor triad.
c b♭ f♯

Apparently, in the early chapters on triads, there is no special letter symbolization used for the augmented and diminished triads. However, as indicated below, the plus sign (+) indicates an augmented triad and a circle (o) indicates a diminished triad when these are part of a seventh chord.

2b. The Roman numeral chord symbol (triads)

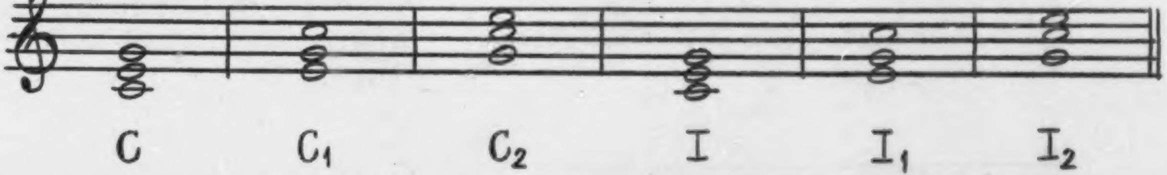
Large Roman numerals are used for all types of triads; VII is used for the leading tone triad.



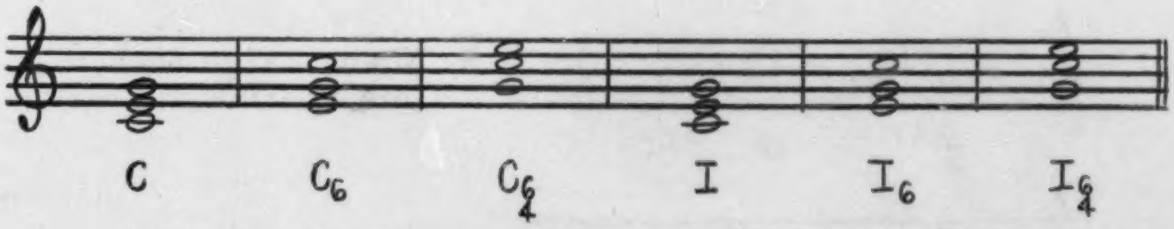
3. Inversions

Two systems are used to indicate the inversions of triads; Wedge apparently prefers the first one since it is most often used.

a. A small 1 (first inversion) or 2 (second inversion) is added to the lower right of the letter or the Roman numeral.

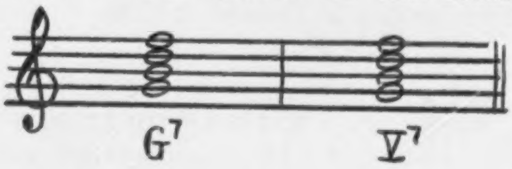


b. The small Arabic numerals 6 (first inversion) or $^{6}_{4}$ (second inversion) are added to the lower right of the letter or the Roman numeral.

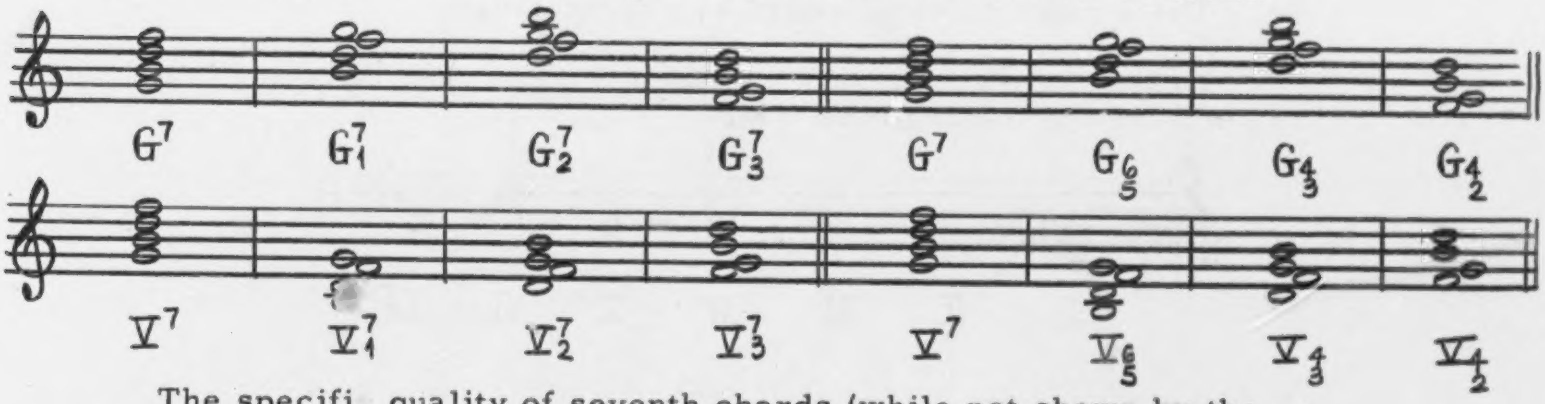


4. Seventh (ninth, etc.) chords

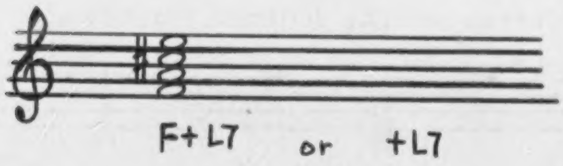
To indicate a root position seventh chord the figure 7 is added at the upper right corner of the letter or the Roman numeral.



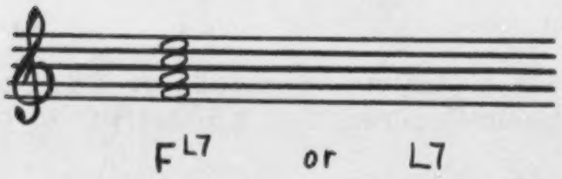
To show the inversions of seventh chords the figure 7 is combined with the small Arabic numerals, or the traditional figures from figured bass are added to the lower right of the letter or Roman numeral.


G^7
G^7_1
G^7_2
G^7_3
G^7
$G_{\substack{6\\5}}$
$G_{\substack{4\\3}}$
$G_{\substack{4\\2}}$
V^7
V^7_1
V^7_2
V^7_3
V^7
$V_{\substack{6\\5}}$
$V_{\substack{4\\3}}$
$V_{\substack{4\\2}}$

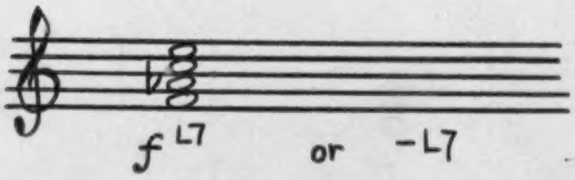
The specific quality of seventh chords (while not shown by the Roman numeral symbolization) is indicated by letter name according to the following chart; he uses the words large and small to indicate major and minor sevenths.



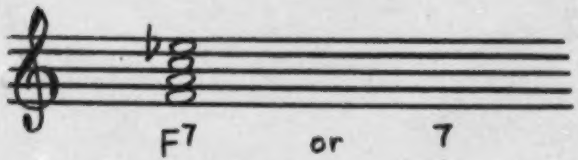
Augmented Large Seventh (augmented triad and major 7th)



Major Large Seventh (major triad and major 7th)

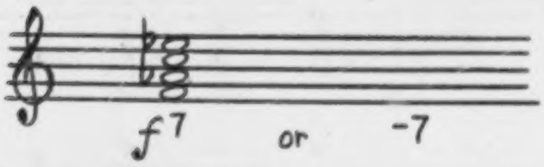


Minor Large Seventh (minor triad and major 7th)

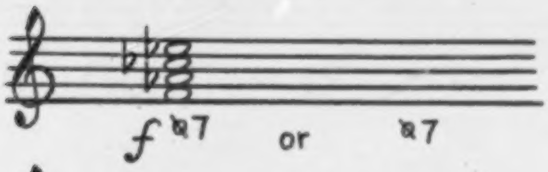


Dominant Seventh (major triad and minor 7th)

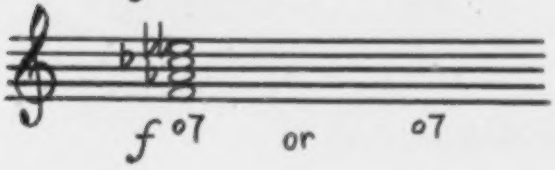
WEDGE (AH)



Small Seventh
(minor triad and minor 7th)



Half-Diminished Seventh
(diminished triad and minor 7th)



Diminished Seventh
(diminished triad and diminished 7th)

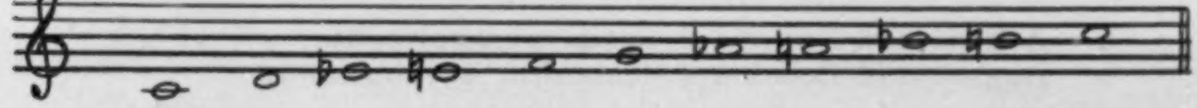
Note: The above half-diminished seventh chord symbol uses a slanting stroke from left to right (♮7); in figured bass the stroke also goes from left to right (♮), but the embellishing half-diminished seventh chord (see below) is symbolized, ø 7.

5. Altered tones

Wedge divides his harmony course into two books: Book I - Diatonic Harmony and Book II - Chromatic Harmony. Although the chart given above, showing the quality of seventh chords, appears in Book I, that book is primarily concerned with unaltered chords. Except for the traditional figured bass, there is no special symbolization used to indicate triads which have an altered tone.

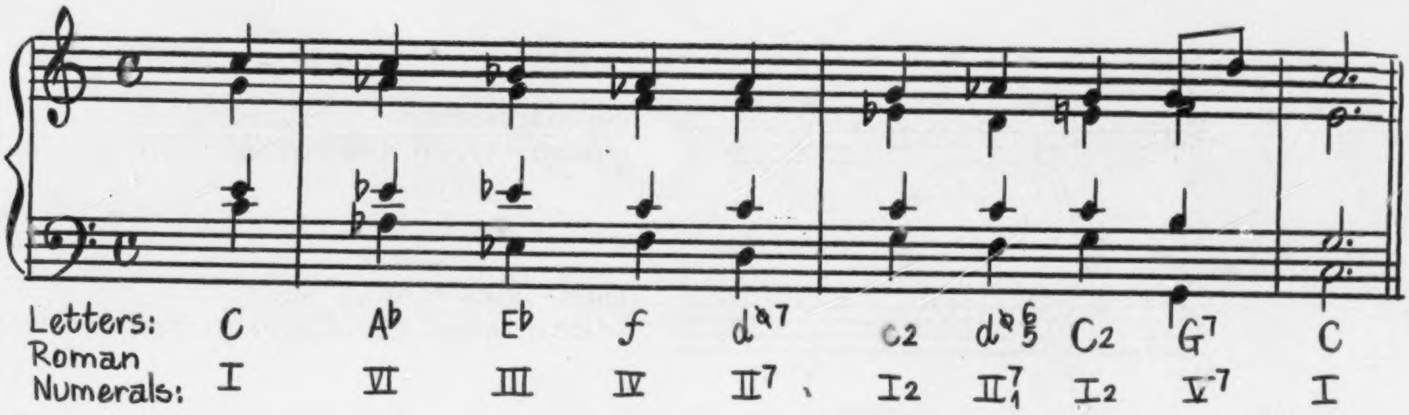
In the Preface to Book II, Wedge states his belief that chords with chromatically altered tones were originally embellishments of, or substitutes for, diatonic harmonies. He treats the common altered chords under the following categories:

a. Borrowed tones (from the opposite mode)



These tone make additional chords possible. When these are symbolized with letters, the symbol shows the chord quality; when they are symbolized with Roman numerals, the symbol for the diatonic chord remains unaltered. For example:

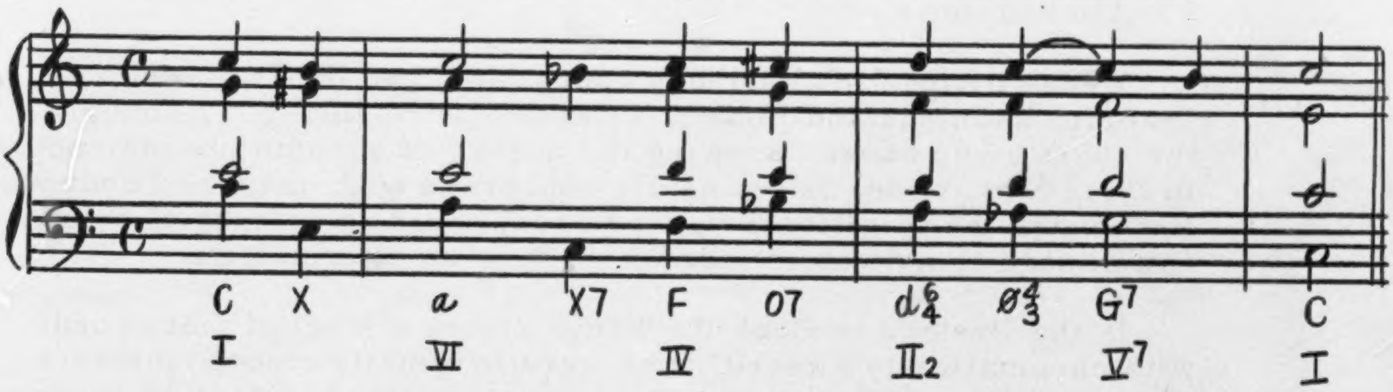
WEDGE (AH)


Letters:
Roman Numerals:
C Ab Eb f dø7 c2 dø6 5 C2 G7 C
I VI III IV II7 I2 II7 1 I2 V7 I

b. Embellishing chords (Secondary dominants)

1. Dominant triad, symbolized: X
2. Dominant-Seventh, symbolized: X7
3. Diminished-Seventh, symbolized: o7
4. Half-diminished-Seventh, symbolized: ø7

In analysis these are shown as in the following example. Note that the analysis involves both letter symbols and Roman numerals.


C X a X7 F O7 d6 4 ø4 3 G7 C
I VI IV II2 V7 I

The following categories contain, not only the traditional augmented sixth and Neapolitan sixth chords, but also other inversions of the augmented triad and seventh chord.

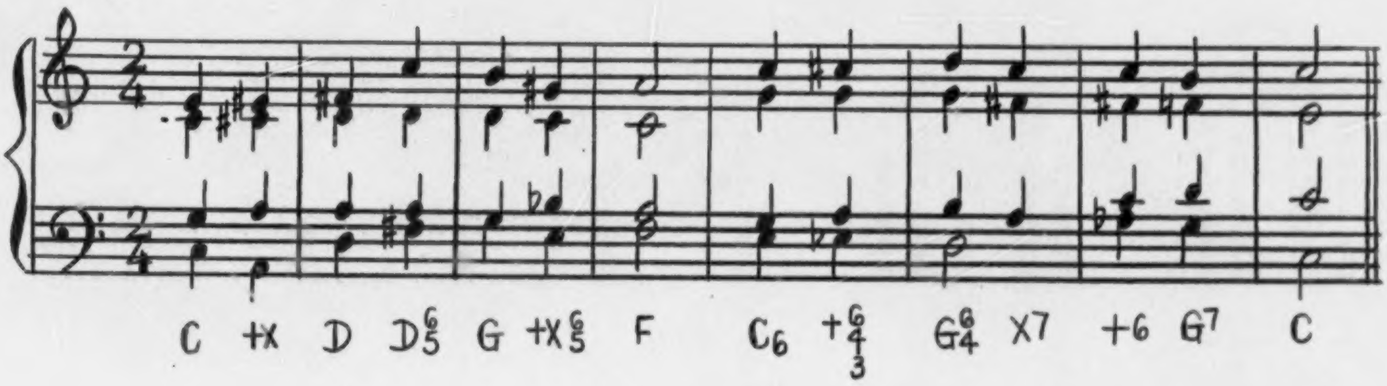
5. Augmented Dominant triad, symbolized: $+X$
6. Augmented Dominant - Seventh, symbolized: $+X^7$

7. Augmented Sixth chord
   Italian, symbolized: $+^6$
   French, symbolized: $+^{\substack{6\\4\\3}}$
   German, symbolized: $+^{\substack{6\\5}}$

8. Neapolitan Sixth, symbolized: §6

9. Embellishing chords spelled enharmonically, symbolized: $\underset{en}{X^{4}_{2}}$ $\underset{en}{X^{4}_{3}}$ $\underset{en}{X^{7}}$ etc.

WEDGE (AH)



6. Modulation

Modulation is explained as the process by which any chord in a key may be expanded by temporarily treating this chord as a key-center.

He does not name the common-chord principle as such, but says that a new key may be entered through V^7 or VII^7. This is symbolized:

C-major: I V^7 I — G-major: V^7 I_2 V^7 I

C-major: I II^7 V^7 I — d-minor: VII^7 I V^7 I

A modulation to any key represented by the diatonic chords may be entered through VI, IV or II^7.

F-major: I V^9 I — d-minor: II^7 I_2 V^7 I

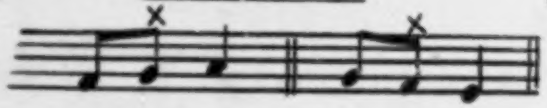
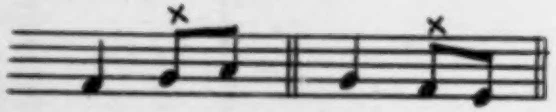
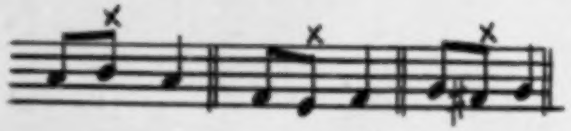
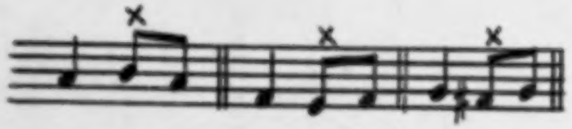
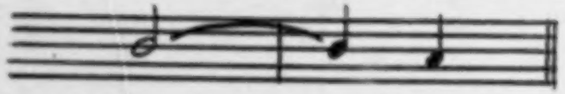
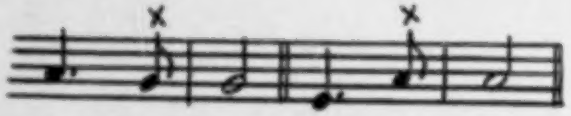
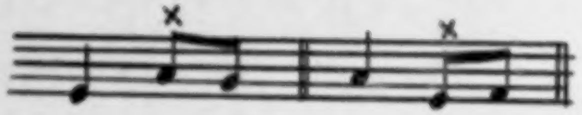
In Book II - Chromatic Harmony - the idea of modulation is extended to any key represented by an altered chord. He gives several situations in which chromatic modulations may take place, among them, these:

1. Modulation may be made through the diminished seventh chord.
2. Modulation may be made to any key using a common tone as a pivot.
3. Modulation may be made to any key through the chromatic progression of one or more voice parts.
4. After a cadence, the next phrase may begin directly in a new key.
5. At any point in a chromatic series of diminished-, half-diminished-, or dominant seventh chords a new key may be established by interrupting the sequence and resolving one of the chords.

None of these procedures requires any special symbolization.

WEDGE (AH)

C. Nonharmonic tones (These are called Inharmonic Tones)

Name	Abbreviation	Examples	Approached	Left	Direction of Resolution
Passing Tone **(a) Unaccented**	- - - None are used - - -		By step	By step	Same as approach
(b) Accented			By step	By step	Same as approach
Neighboring Tone **(a) Unaccented**			By step	By step	Opposite to approach
(b) Accented			By step	By step	Opposite to approach
Suspension			Tied or repeated note	By step	Down
Anticipation			By step or skip	Repeated note	Same tone
Appoggiatura			By skip	By step	

VI. CHORD SYMBOLS CURRENTLY USED IN POPULAR MUSIC OR JAZZ

In September, 1963 a letter was sent to twelve publishers of popular sheet music requesting them to send examples of their recent publications to this investigator so that the chord symbolization might be studied. This request went to the following firms:

Big Three Music Corporation
Chappell & Co., Inc.
Famous Music Corporation
Fred Fisher Music Co.
Hansen Publications, Inc.
Irving Berlin, Inc.
Edward B. Marks Music Corporation
Mills Music, Inc.
Edwin H. Morris & Co., Inc.
Music Publishers Holding Corporation
Sam Fox Publishing Co., Inc.
Shapiro, Bernstein & Co., Inc.

Nine of the twelve publishers responded, and several wrote letters expressing an interest in the project and its recommendations. All of the publishers that responded sent representative copies of popular songs for study.

Fifty different popular songs were received and these were all studied to determine exactly what symbols are currently being used in this field. This number of samples was not felt to be sufficiently large to give an absolutely definitive picture of this type of symbolization, but it was felt that the main features would be shown adequately.

From a study of these fifty representative songs the following statistics were obtained; comments on and discussion of each category will be found later in Chapter VII, D, Analysis of Data and Findings.

Keys Used: (The key was determined from the key sginature and the final chord.)

Major Keys		Minor Keys	
C major	12	c minor	1
D major	1	e minor	1
E♭ major	6		
F major	11		
G major	7		
B♭ major	11		

Chord symbols: In printed sheet music, for voice and piano accompaniment, it has long been customary to add, above the voice part, a diagram showing the fingering for the ukulele, and a chord symbol for the guitar. Following is a listing of all of the types of chord symbols which were found.

1. Major triad:

A major triad is symbolized by a capital letter (followed by the accidental, if this is necessary.)

C B♭ F♯

The major triad was found only on the following degrees:

C D♭ D E♭ E F G♭ G A♭ A B♭ B

2. Minor triad:

A minor triad is symbolized by a capital letter followed by a small letter m, or, rarely, by min.

Cm B♭m F♯m (or C min, etc.)

The minor triad was found only on the following degrees:

Cm C♯m Dm E♭m Em Fm F♯m Gm A♭m Am B♭m Bm

3. Augmented triad:

An augmented triad is symbolized by a capital letter followed by a plus sign (+), or, rarely, by aug.

C+ B♭+ (or C aug, etc.)

The augmented triad was found only on the following degrees:

D+ E+ F+ A+ B♭+ B+

4. Diminished chord:

The diminished triad is not used; the diminished seventh chord is symbolized by a capital letter followed by dim, or, rarely, by the small circle (°).

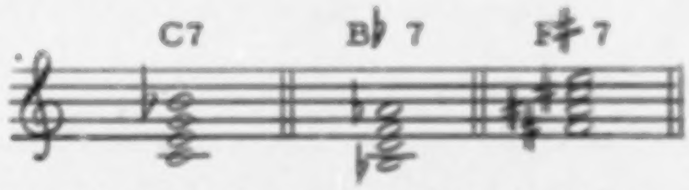
C dim B♭ dim F♯ dim (or C°, etc.)

Diminished seventh chords were found only on the following degrees:

C dim C♯ dim D♭ dim D dim D♯ dim E♭ dim
E dim F dim F♯ dim G dim G♯ dim A♭ dim
A dim B♭ dim B dim

5. Seventh chord:

The basic seventh chord is the dominant, or major-minor, type. This is symbolized by a capital letter followed by the figure seven (7).

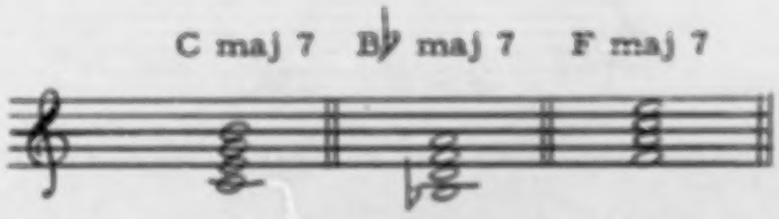


Seventh chords were found only on the following degrees:

C7 C♯ 7 D♭ 7 D7 E♭ 7 E7 F7
F♯ 7 G♭ 7 G7 A♭ 7 A7 B♭ 7 B7

6. Major seventh chord:

The major seventh chord is symbolized by a capital letter followed by maj 7.

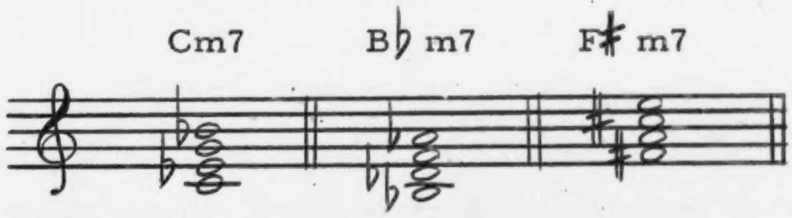


Major seventh chords were found only on the following degrees (these are the same degrees on which major triads occurred):

C maj 7 D♭ maj 7 D maj 7 E♭ maj 7 E maj 7 F maj 7
G♭ maj 7 G maj 7 A♭ maj 7 A maj 7 B♭ maj 7 B maj 7

7. Minor seventh chord:

The minor seventh chord is symbolized by a capital letter followed by m7.



Minor seventh chords were found only on the following degrees (these are the same degrees on which minor triads occurred):

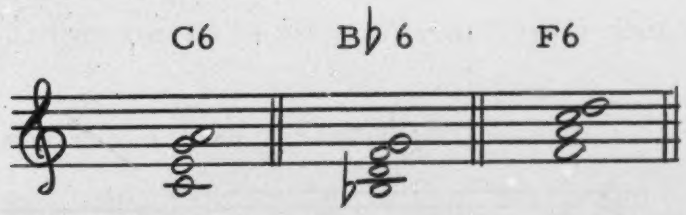
Cm7 C♯ m7 Dm7 E♭ m7 Em7 Fm7
F♯ m7 Gm7 A♭ m7 Am7 B♭ m7 Bm7

The seven chord types given above are the basic sonorities of jazz and popular music. Other sonorities are obtained by modifying one of these seven basic types; the modifications are made by (a) additions, and (b) alterations.

Additions

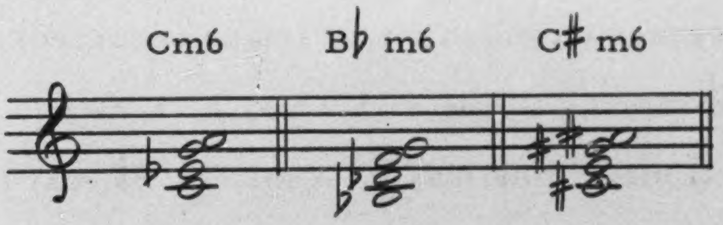
The most frequent added note is the major sixth; this is added to both the major and minor triads. These chords are symbolized by a 6 following the symbol for a major or minor triad.

8. Major triad with added 6th:



These chords were found on the same degrees as were major triads and major seventh chords.

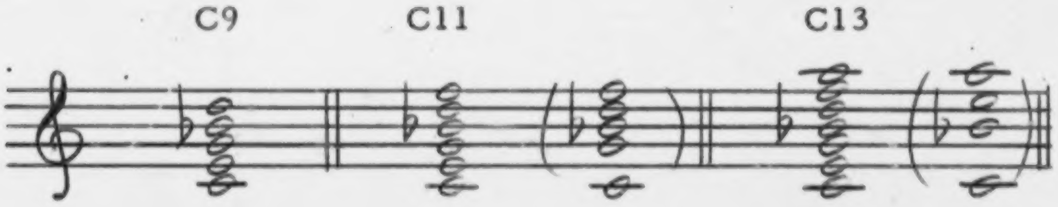
9. Minor triad with added 6th:



These chords were found on the same degrees as were minor triads and minor seventh chords.

10. Ninth, eleventh and thirteenth chords:

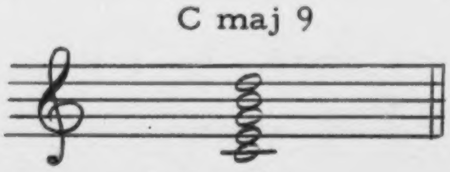
If there is no indication to the contrary (see alterations listed below) ninth, eleventh and thirteenth chords are of the dominant type as found in the major key.



These chords are not always complete; some tones may be omitted as indicated in the above example.

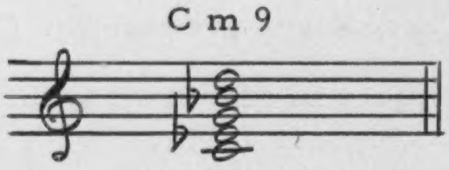
11. The major ninth:

This chord contains the major third, major seventh and major ninth, i. e., a major ninth is added to the major seventh chord.



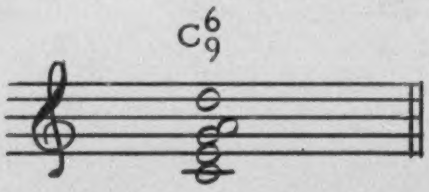
12. The minor ninth:

This chord contains the minor third, minor seventh and major ninth, i. e., a major ninth is added to the minor seventh chord.

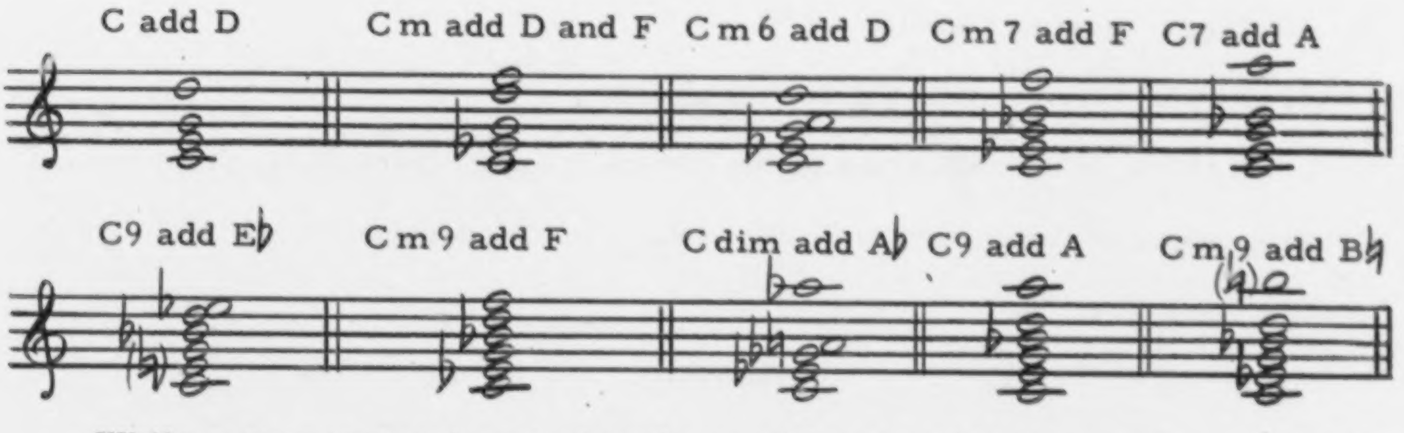


13. Other additions:

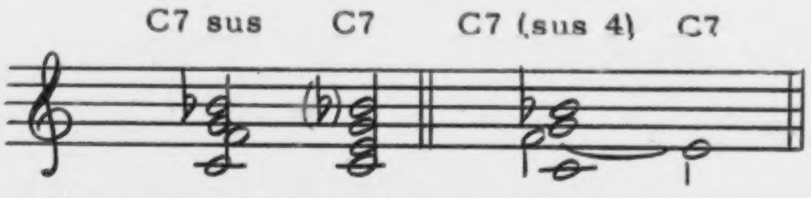
Other additions occur less frequently, but the following symbols were found indicating added tones; they are all given here using C as the chord root.



This symbol would exclude the use of the seventh with the ninth.


C add D
C m add D and F
C m 6 add D
C m 7 add F
C7 add A
C9 add E♭
C m 9 add F
C dim add A♭
C9 add A
C m 9 add B♮

While a suspension is not strictly speaking an added tone, this symbolization will be given here. Two symbolizations were found; the resolution of the suspension is indicated by the next chord symbol.

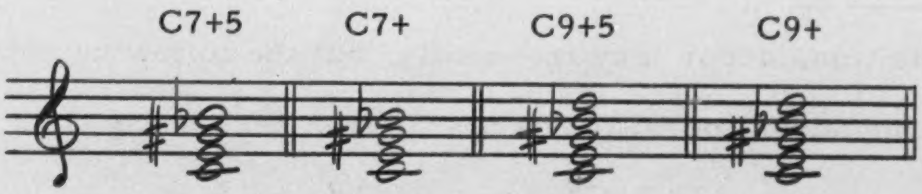

C7 sus
C7
C7 (sus 4)
C7

Alterations

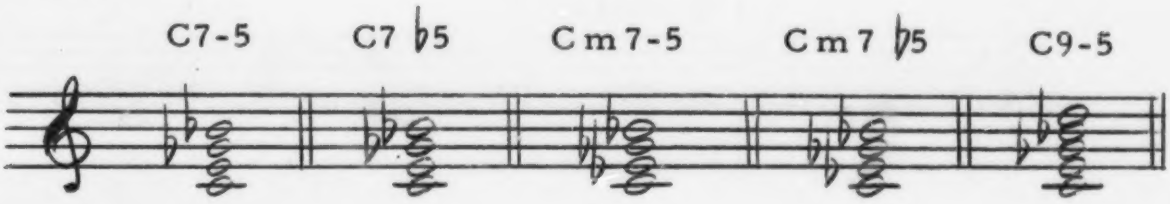
The only alterations found involved the raising or lowering of the fifth, and the lowering of the ninth of a chord. The principle might also be extended to raise or lower other chord members, as for instance, the eleventh, but no examples were found in the limited number of samples available.

Two types of symbolization were found: (a) plus and minus signs were used to mean raised and lowered, or (b) accidentals were used to indicate raised and lowered tones. These signs precede the figure affected; a plus sign without a figure always refers to the chord fifth.

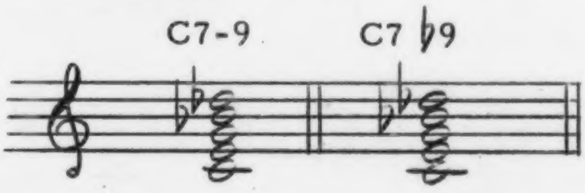
14. The raised 5th:


C7+5
C7+
C9+5
C9+

15. The lowered 5th:

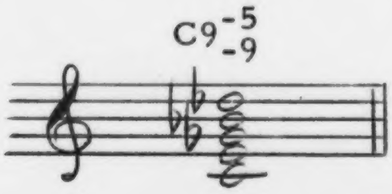


16. The lowered 9th:

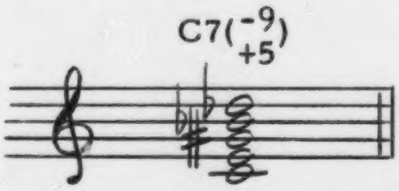


17. Other Alterations:

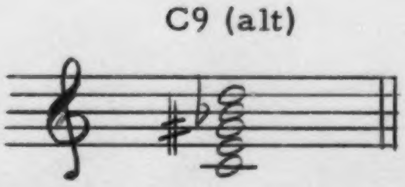
Both the lowered fifth and lowered ninth occurred:



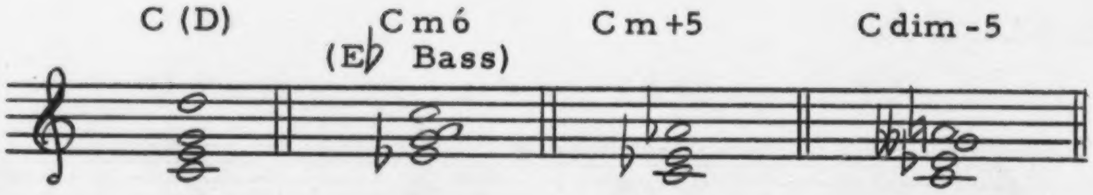
Also the raised fifth and lowered ninth:

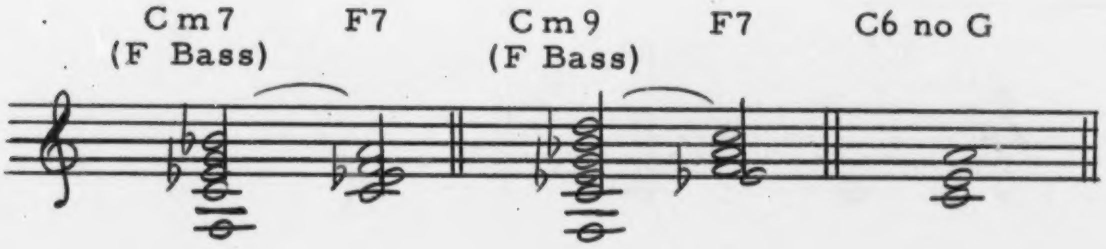


The following symbol was found and indicates an altered chord, but the exact alteration could not be known without reference to the staff notation.



No other alterations were found. However, a few unusual symbolizations were encountered; these are given below and will be discussed in Chapter VII, D.


C (D)
Cm6
(E♭ Bass)
Cm+5
Cdim-5


Cm7
(F Bass)
F7
Cm9
(F Bass)
F7
C6 no G

PART III. A STANDARDIZED SYMBOLIZATION RECOMMENDED FOR GENERAL USE

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VII. ANALYSIS OF DATA AND FINDINGS

A. FIGURED BASS

The most universally used system of symbolization is the one called figured bass. Arnold, in his monumental work The Art of Accompaniment from a Thorough-Bass, makes a distinction between the terms "figured bass" (Basso numerato, Basse chiffrée, bezifferter Bass) and "thorough-bass" (Basso continuo, Basso generale, etc.) although he says that the terms have come to be regarded as synonymous.[1] "Through-bass" or "thorough-bass" were terms which referred to a bass part which was continuously present (Basso continuo) even though, in a composition for several voices and accompaniment, the vocal bass part might, at times, be resting. "Figured bass" on the other hand, denoted a bass part with figures and accidentals which referred to the harmony above it. This system of figuration goes back to the beginning of the seventeenth century when Italian composers began the practice of using Arabic numerals to suggest the proper harmonies for continuo parts. This was a labor-saving device by which the composer was relieved of the task of writing out all of the notes for the supporting harmonic instrument. In the new style of accompanied monody--which was used for opera and many other vocal forms--a lute or a keyboard instrument, such as the portative organ, or later the harpsichord, clavichord or virginal, was used to improvise the harmonic support for the melodic line. Ludovico da Viadana was, at one time, thought to be the inventor of figured bass. However, the work of Viadana, which gives the twelve famous rules for accompanying, the Cento Concerti Ecclesiastici, was not published until 1602 and this had been preceded by publications in 1600 by Peri, Caccini and Cavalieri which included figures.[1] Arnold has traced the history of this system of figuration from the beginning of the seventeenth to the end of the eighteenth century. It would be difficult to imagine a more scholarly and thorough treatment of this subject and this investigator has turned to this important work for the answers to many puzzling practices and conventions.[2] Indeed, the Arnold work and the Essay[3] of C. P. E. Bach together give a most complete background for this system and show how it was used in actual practice.

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[1] F. T. Arnold, The Art of Accompaniment from a Thorough-Bass (London: Oxford University Press, 1931), p. 6.

The conventions in the use of the figures have changed through the years and, while it is not our intention here to attempt any complete history of this subject, certain earlier practices will be mentioned in order to compare them with those of the present.

For example, Caccini in Le Nuove musiche[4] uses figures to show compound intervals in the exact octave in which he wants them to sound. Today, for the sake of simplicity, we figure a twelfth (12) with the number 5, disregarding the actual octave. Caccini, along with many others, also used a sharp and a flat to indicate major and minor thirds above the bass note, regardless of the key. All modern versions of figured bass use the precise accidental needed in each particular key.

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[1] Matthew Shirlaw, while devoting part of a chapter to "Figured Bass Schools," does not attempt to credit the invention of figured bass to any single inventor in The Theory of Harmony (DeKalb, Illinois: B. Coar, Second edition, 1955).

[2] Libraries are fortunate in that a new edition (1961) of this famous work has now been made available in London by The Holland Press.

[3] Carl Philipp Emanuel Bach, Essay on the True Art of Keyboard Instruments, trans. William J. Mitchell, (New York: W. W. Norton & Co., Inc., 1949).

[4] Le Nuove musiche di Giulio Caccini, detto Romano, Florence, 1602 - Facsimile published by Reale Accademia d'Italia, 1934.

There are, of course, minor differences of opinion among many contemporary theorists. For example, four of the theory books studied (Chadwick, Forte, Heacox and Tapper) place the figures above the given bass part or between the treble and bass parts. They apparently are following the older examples as found in, for instance, the C. P. E. Bach treatise.[1] In the eighteenth century when the performance practice was to improvise the continuo part, this placement of the figures was no doubt the most convenient for the player to read. Today, when figured bass is being used for an entirely different purpose in harmony books, most of the authors studied have found the most convenient placement of the figures to be below the bass part. Of the twenty-nine books which used figured bass, four placed the figures above the bass part and twenty-four below; one book used both placements. This report will recommend the placement of the figures under the bass part, since this is the consensus of the majority today.

For altered tones in figured bass, should the accidental precede or follow the figure? Eighteen authors favor placing the accidental before the figure, while ten authors have the accidental follow the figure.[2]

---

[1] Bach says (on page 187 of the Essay): "41. It is not good to place figures under the notes, for this position should be reserved for piano and forte signs. But at times it is not possible to write them elsewhere; for example, when two voices, one for the cello, the other for the keyboard, are written on one staff."

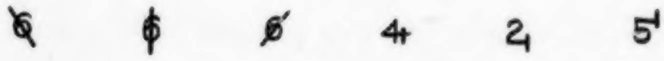
Despite the above statement the examples in the Essay have innumerable examples with the figures below the bass part, and these occur when there is no cello part to confuse the issue. This suggests that Bach put the figures wherever it was most convenient to write them.

[2] In the Essay (page 185) Bach says the accidental may precede or follow the figure and in his examples both cases occur suggesting, again, that he attached little importance to the placement of the accidental in relation to the figure.

It will be our recommendation that the accidental precede the figure, since this practice seems more consistent with that of staff notation where the accidental precedes the note. Historical precedent, however, can be found for both practices in many early treatises on thorough-bass.

There is almost universal agreement that an accidental alone refers to the third above the bass note.[1]

There are several special signs[2] which, in one book or another, are used to indicate a raised interval:



This investigator tends to agree with Hindemith who says, "since these signs were not used consistently by all composers, they are here replaced by ♯, ♭, ♮, x, and ♭♭, in the interests of an unambiguous notation."[3] However, there is substantial agreement in many books in favor of the slanting stroke from upper right to lower left, as 6̸. This also has the advantage of being able to be written with the usual characters found on the standard typewriter keyboard. Our recommendation will, therefore, suggest that the preferred way to indicate a raised figure will be with the necessary accidental, (♯6) but that the slanting stroke (6̸) may also be used.

There is one other point concerning figured bass which is sometimes confusing, especially to students who are just learning the conventions of the system. It is generally understood that a bass note with no figure is to be interpreted as the root of a triad ($\genfrac{}{}{0pt}{}{5}{3}$); but when a passing tone occurs in the bass part and is unfigured, this creates an apparent inconsistency. For

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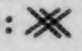
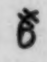
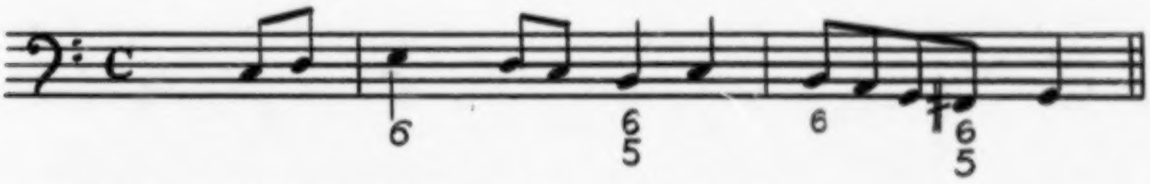
[1] But see the abstract of Sessions (HP) where an accidental combined with a Roman numeral has a different meaning.

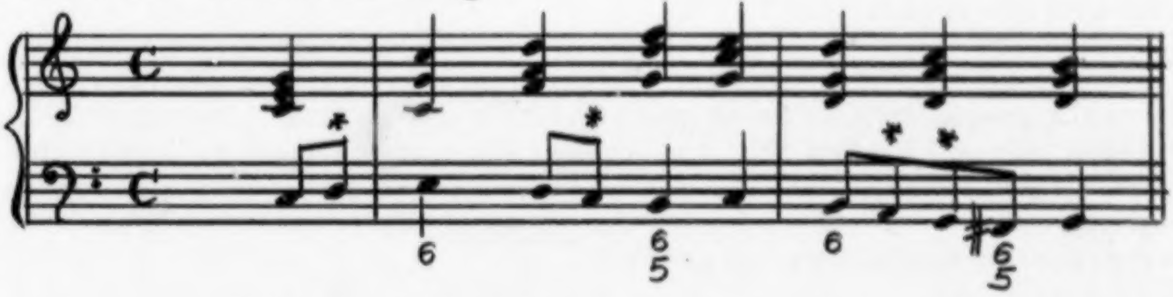
[2] Besides the ones given here, Arnold also shows:  and  .

[3] Paul Hindemith, Traditional Harmony (New York: Associated Music Publishers, Inc., 1944), p. 66.

example, the following bass might appear in many harmony books today:

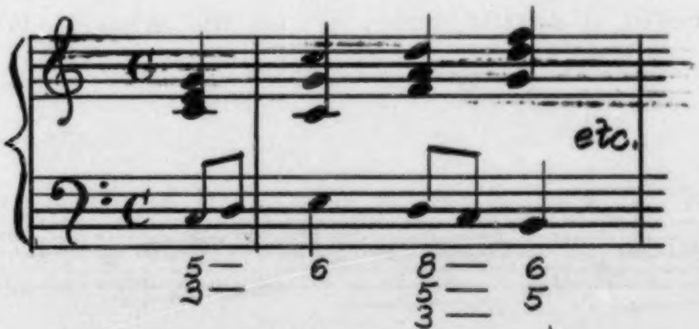


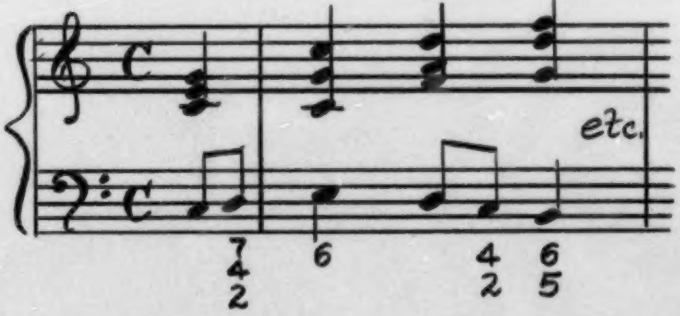
The intended realization being:



The notes marked with asterisks are obviously passing tones and have not been accounted for by the figures. The student should, of course, realize that in the early use of figures there was no intention that they be a complete and fool-proof system; they were only intended as suggestions to the performer who was supposed to use his imagination in realizing an accompaniment. Today, figured bass, as used in theory books, is apt to be interpreted in a much more literal fashion, and in order to keep confusion at a minimum should be as unambiguous as possible.

The only certain way to make figured bass as accurate as possible is to figure all of the bass notes whether they are harmonic or decorative. At least two ways have been suggested to do this.





The first figuration (a.) seems at first glance to be the simpler of the two, but in reality it is inconsistent, since, with the appearance of the second eighth note, the point of reference for the first eighth note is no longer present. The (b.) solution is recommended as the one least prone to misinterpretation.[1]

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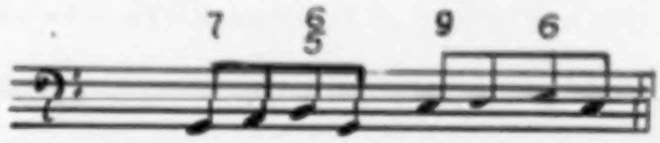
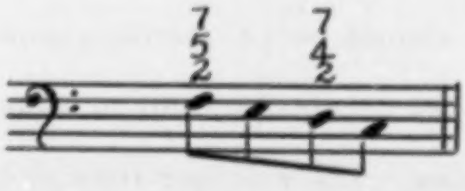
[1] Arnold gives both ways as possibilities but seems to prefer the use of the dash, since he says that the appearance of the figures under the passing tone might suggest that the notes are to be struck again rather than to be sustained. C. P. E. Bach in the Essay, indicates the eighteenth century practice as follows (page 196):

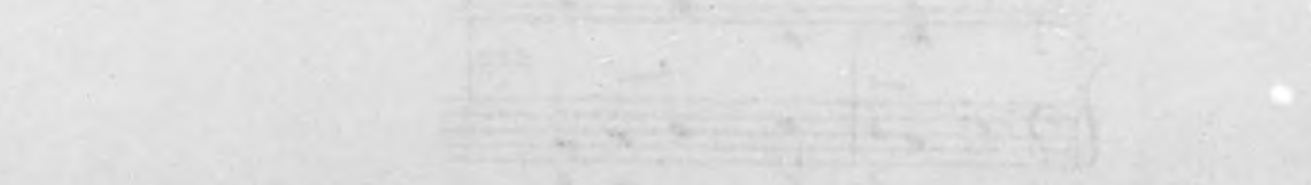
"74. When the accompaniment is played with its proper bass on the long (accented) part of the bar, the passing tone is called regular (transitus regularis). With notes of equal value, the first, third, etc., are long according to the meter and the second, fourth, etc., short.



75. When the accompaniment is played on the long pulse ahead of its proper bass, which falls on the short pulse, the passing tone is irregular (transitus irregularis) and is known as a changing note.



76. When the composer prefers not to figure changing notes he may set figures over only the succeeding tones, or place over the changing notes an oblique stroke, a circle, a semicircle, or an m, which, on occasion, may be lengthened."



Except for the few points just discussed, there is quite general agreement on figured bass practice between all of the theory books in this study.

These conventions may be summed up as follows:

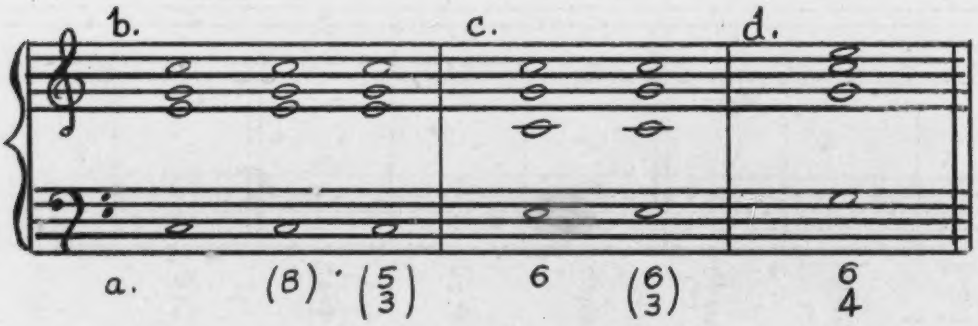
1. Triads and inversions

a. Figures and accidentals are placed below, rather than above the given bass part.

b. A bass note with no figures, or with any arrangement of $\begin{smallmatrix}8\\5\\3\end{smallmatrix}$, indicates a root position triad.

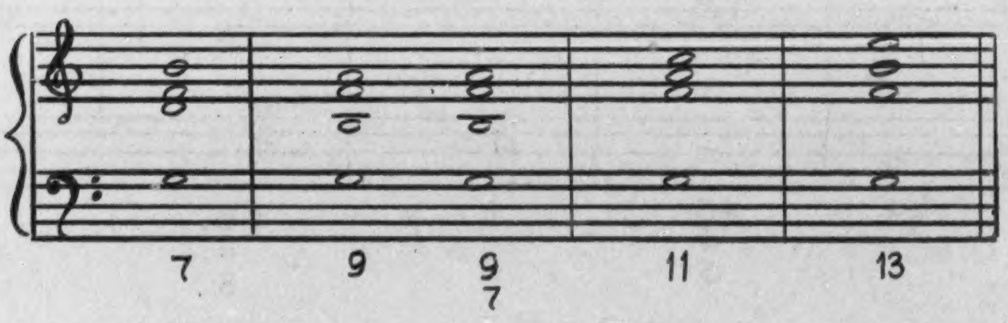
c. A bass note with 6 or $\begin{smallmatrix}6\\3\end{smallmatrix}$ indicates a first-inversion triad.

d. A bass note with $\begin{smallmatrix}6\\4\end{smallmatrix}$ indicates a second-inversion triad.

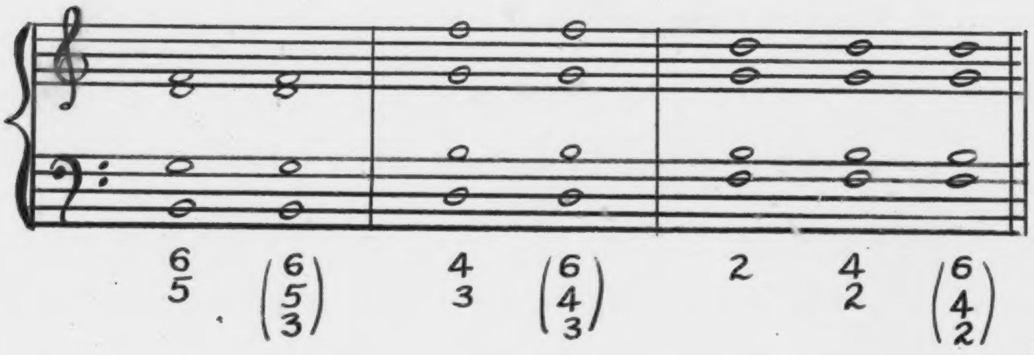


2. Seventh (ninth, etc.) chords and inversions

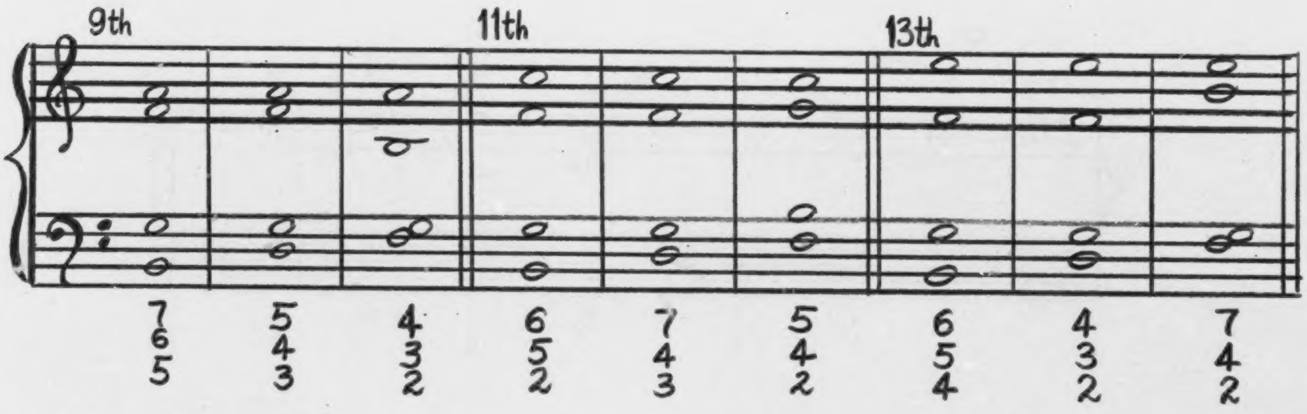
a. Root-position seventh, ninth, eleventh and thirteenth chords are indicated by the following figures:



b. The inversions of a seventh chord are indicated:

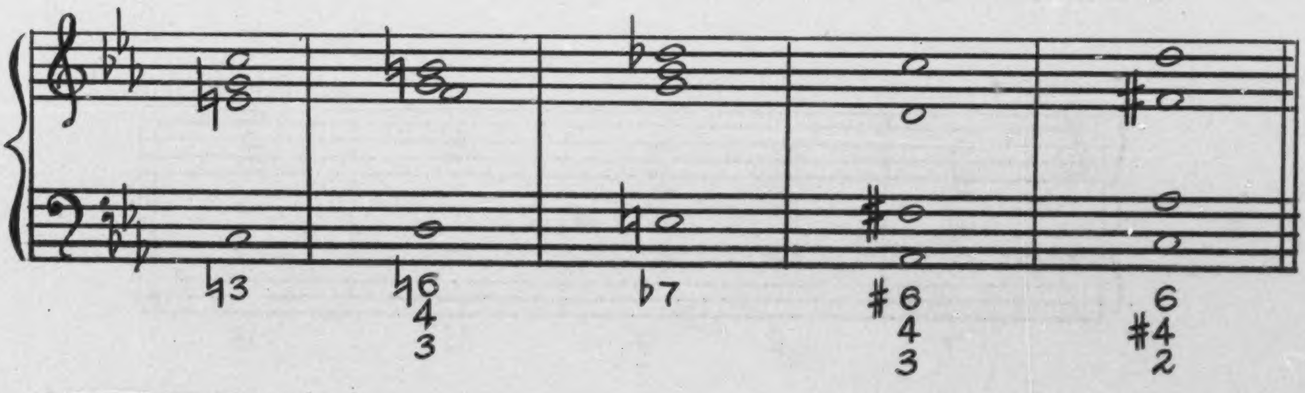

6
5
(6
5
3)
4
3
(6
4
3)
2
4
2
(6
4
2)

c. Ninth, eleventh and thirteenth chords are usually found, and are more effective, in root position than in inversion. The following inversions might be found; but the figures are less important than the actual distribution of the tones:

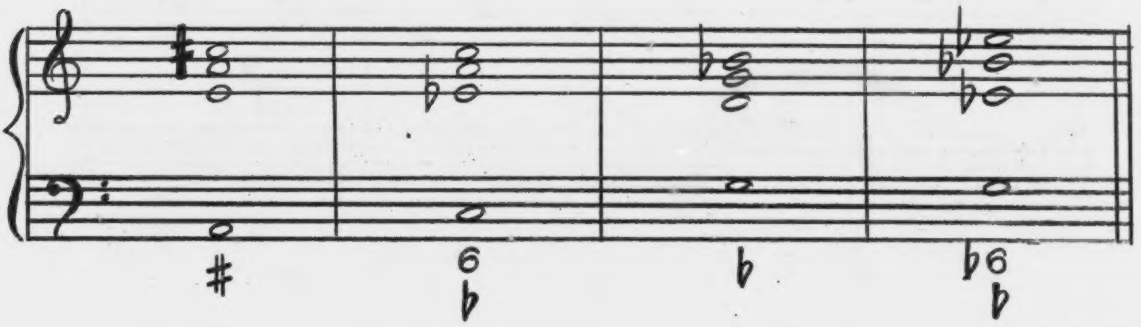

9th
11th
13th
7
6
5
5
4
3
4
3
2
6
5
2
7
4
3
5
4
2
6
5
4
4
3
2
7
4
2

3. Altered tones

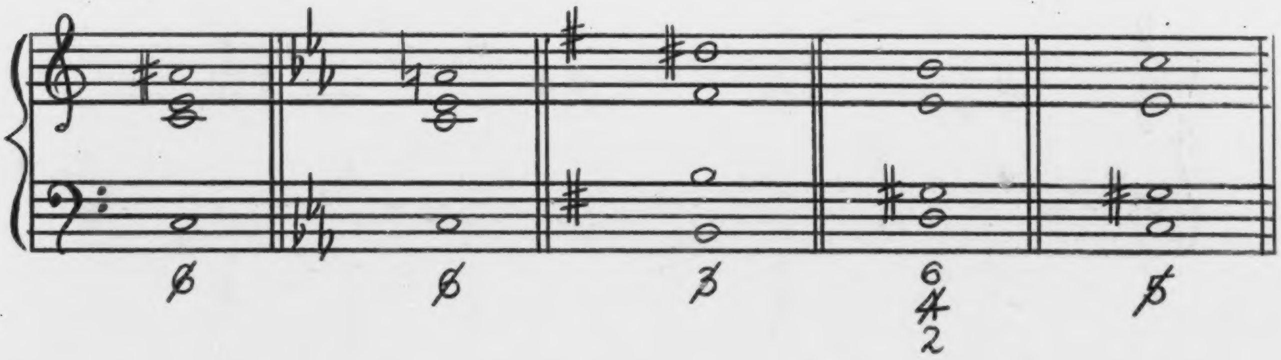
a. An interval above a bass note is altered by placing the necessary accidental before the figure.


♮3
♮6
4
3
♭7
♯6
4
3
6
♯4
2

b. An accidental, without a figure following it, refers to the third above the bass note.

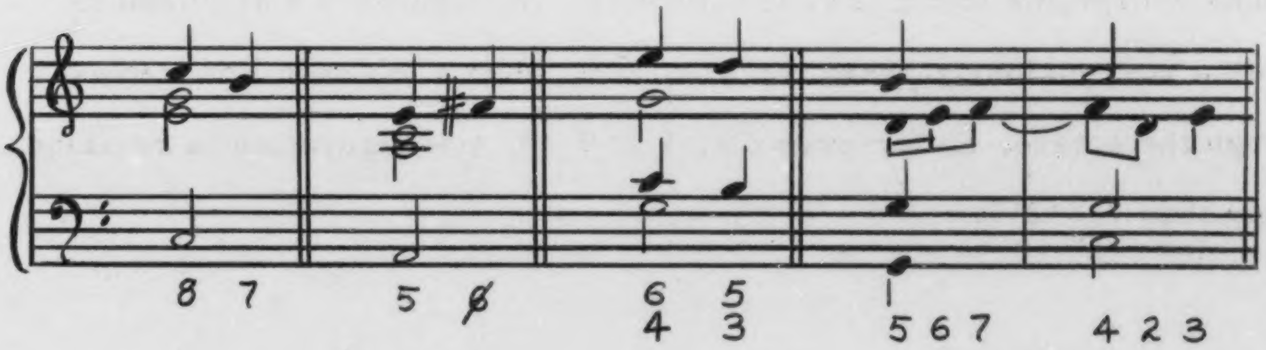


c. An interval above a bass note may be raised a half-step by a diagonal stroke drawn through the figure from upper right to lower left.

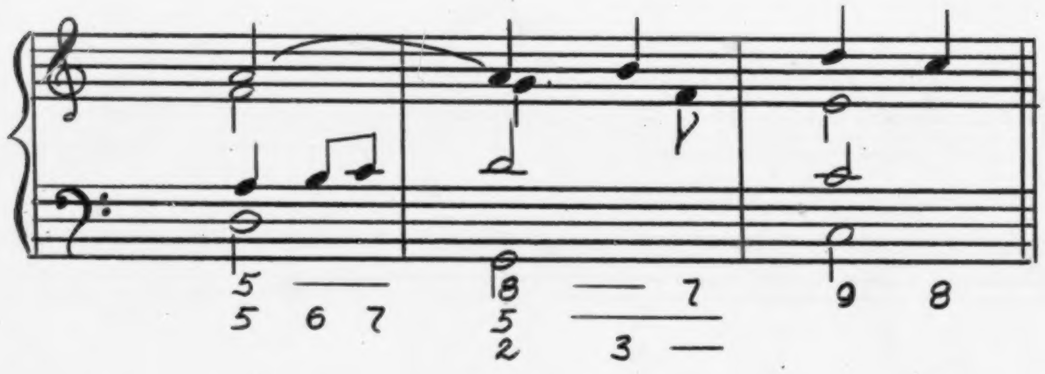


4. Nonharmonic tones

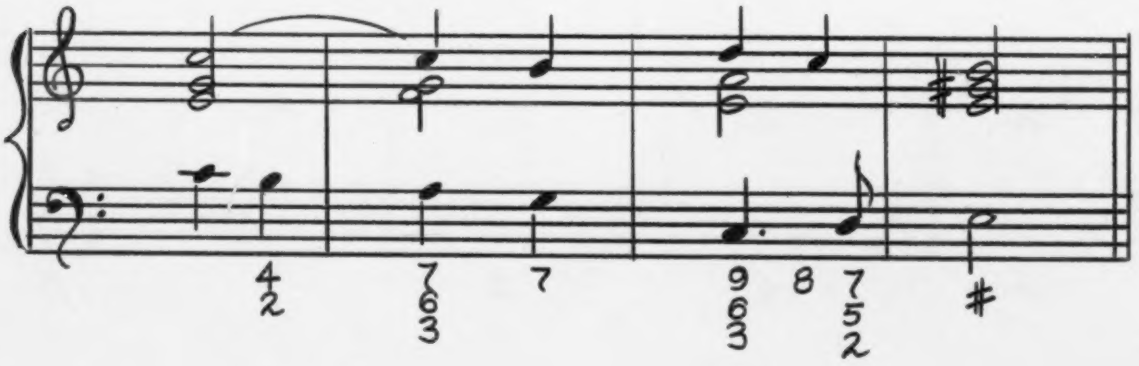
a. Motion in an upper part is shown by the appropriate figures placed in the same horizontal plane. While spacing and alignment show, in general, where the notes occur, no attempt is made to indicate the exact rhythm.



b. A dash indicates a held or repeated note.



c. When nonharmonic tones occur in the bass voice, the actual intervals occurring above these should be shown by the figures.



Lastly, there are two conventions of figured bass which are usually taken for granted. When two or more figures appear vertically below a bass note they are arranged with the larger numbers at the top and the smaller ones at the bottom of the column $\left(\begin{smallmatrix}6 & 7 & 6\\ 4 & 5 & 4\\ & 3 & 2\end{smallmatrix}\right)$. As a general rule, compound intervals such as 10 or 12 appear as simple intervals like 3 or 5. The exceptions found are the following: the figures 9 8 are used to denote a suspension, rather than 2 1, and, when a melodic line moves through the octave, as for example, 7 8 9 10, this figuration is retained rather than 7 8 2 3.

B. THE CHORD SYMBOL

The practice of using Roman numerals to show harmonic function in relation to a tonic goes back at least to the beginning of the nineteenth century. In looking into the background of this type of functional symbolization, this researcher found at least three sources,[1] that suggested that our present system was largely the invention of Gottfried Weber, an early nineteenth century German theorist, and the cousin of Carl Maria von Weber.

Weber's important treatise, published first in 1817-21,[2] and in several later German editions, was translated into English by James F. Warner and appeared in at least three Boston editions in 1841, 1842 and 1853,[1] and in 1851 in a London edition,[2] translated by John Bishop.

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[1] The article "Harmonielehre" - in Die Musik in Geschichte und Gegenwart, ed. Friedrich Blume, Band 5 (Kassel und Basel: Barenreiter-Verlag, 1956) p. 1640 - states (author's translation): " . . . the symbolization based on the system of degree progression which was developed by G. Weber and his followers for the practical teaching of harmony, and which symbolizes the before-mentioned sonorities as follows (in C major): V7, II$^{6}_{5}$, VI, II." In the article on Gottfried Weber in Baker's Biographical Dictionary of Musicians (Fifth edition rev. by N. Slonimsky. New York: G. Schirmer, 1958) is the following (page 1169): " . . . his important and valuable Versuch einer geordneten Theorie der Tonsetzkunst, introducing the system of indicating chords by capitals (major) and small letters (minor), seventh-chords by adding a small 7 (e.g., C^{7}), etc." Hugo Riemann concludes Book III of his important Geschichte der Musik theorie im IX. - XIX. Jahrhundert (1898) with a chapter called, "Musikalische Logik" which covers all of the important systems of analytic symbolization from the figured bass period down to his own time. While the first two volumes of Weber's Versuch were published in 1817, the publication of the third volume was delayed until 1821, and in the intervening time a theory book, Elementarbuch der Harmonie und Tonsetzkunst (1820), by Friedrich Schneider appeared which apparently utilized Weber's symbolization without crediting it to him. Riemann says (op. cit., p. 513-author's translation): "Today in all commonly used harmony books the symbolization of chords with large Roman numerals (for major chords) or small Roman numerals (for minor chords) and the placement of letters to symbolize the key (which changes in modulation) has in this form been established, not by Friedrich Schneider, but already by G. Weber in the second volume of his work for the analysis of harmonic progression."

[2] Gottfried Weber, Versuch einer geordneten Theorie der Tonkunst, 3 vols. (Mainz: B. Schott, 1817-1821)

In order to establish exactly what Weber's contribution had been, it was necessary to examine the writings of his teacher, Vogler, and also the publications of important theorists who had preceded him and who might have had some influence upon him. In preparing his treatise on composition, Weber had studied the earlier works of Marpurg, Kirnberger and Vogler; Abbé Vogler in turn had spent some time in Italy and had studied with Vallotti.

Accordingly, important treatises which preceded Weber's were searched for evidence of any type of analytic symbolization which was used in place of staff notation. The following list gives the results found:

1722 J. P. Rameau. Traité de l'harmonie. Paris: Ballard, 1722. No Roman numerals used. Theory of fundamental bass is proposed.

1755 Friedrich Wilhelm Marpurg. Handbuch bey dem Generalbasse und der Composition. Berlin: Verlag J. J. Schützens Wittwe, 1755. No Roman numerals used.

1771 Joh. Phil. Kirnberger. Die Kunst des reinen Satzes in der Musik. Vol. 1, Berlin: bey Christian Friedrich Voss, 1771. Vol. 2, Berlin und Königsberg: bey G. J. Decker und G. L. Hartung, 1776.

These volumes use large letters (C, D, E, etc.) to indicate tones, keys and chords in the text, however, they are not used in connection with examples in staff notation. Notated examples use figured bass (placed above the bass part) but no Roman numerals.

1776 Georg Joseph Vogler. Tonwissenschaft und Tonsezkunst. Manheim: gedruckt in der kurfürstlichen Hofbuchdruckerei, 1776.

______. Grunde der kuhrpfälzischen Tonshule in Beispielen. (No date or place of publication given on title page; this consists of illustrative examples for the preceding book)

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[1] ______, Theory of Musical Composition, 2 vols., trans. by James F. Warner (Boston: J. H. Wilkins & R. B. Carter, 1841).

______, Theory of Musical Composition, 2 vols. trans. by James F. Warner (Boston: Oliver Ditson & Co., 1842 and 1853).

[2] ______, Theory of Musical Composition, trans. by John Bishop with notes by James F. Warner (London: Messrs. Robert Cocks and Co., 1851).

Vogler, in this work, uses letters to refer to tones, keys and chords. He also has music examples with the extracted roots of chords shown on a separate bass staff. The real line is accompanied by conventional figures, the fundamental bass is also figured, the Arabic figures showing the actual distance from the root to the other notes sounding above it. No Roman numerals are used.

1779 P. Francescantonio Vallotti. Trattato della moderna musica Padua: Il Messaggero di S. Antonio - Basilica del Santo, 1950 (Only Part I was published in 1779.)

No Roman numerals are used, but, both letters (C, D, E) and syllables (do, re, mi) are used in the text. This contains some music examples with the roots of chords written on a separate staff, and a chapter on fundamental bass (Del basso fundamentale). As an interesting sidelight, Vallotti states unequivocally that Rameau was not the sole inventor of the concept of fundamental bass (see pages 335-336 of this treatise). He says that this analytical procedure was discovered many years before Rameau's publication by Father Calegari, his predecessor as the Maestro at the Cappella di S. Antonio in Padua, and that his (Vallotti's) own style of composition was formed upon the idea of fundamental bass many years before Rameau's treatise came into his hands.[1]

1790 Johann Georg Albrechtsberger. Gründliche Anweisung zur Composition. Leipzig: Breitkopf, 1790. No Roman numerals are used; this is a book on counterpoint.

1802 Georg Joseph Vogler. Handbuch zur Harmonielehre und für den Generalbass. Prague: Karl Barth, 1802.

This is the first use of Roman numerals which was found in this limited search. Vogler places the figured bass above the bass part and a Roman numeral analysis below it. Only large Roman numerals are used and there is no systematic indication of different chord types or of sevenths, etc. There seems to be little doubt, from the plentiful number of music examples in this Handbuch, that the use of Roman numerals was a well established practice by this time (1802). Since no Roman numerals were found in the earlier Vogler work (1776), it would be interesting to trace the influences upon Vogler in the intervening years which might suggest the origin of the Roman numerals. No reference works credit Vogler with the use of Roman numerals fully fifteen years before the appearance of

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[1] The present editors of Vallotti's treatise (1950) evidently put some credence in his claim since they have added an additional footnote which tends to corroborate his statement, or at least to suggest that Calegari and Vallotti arrived at the principle independently of Rameau. More research needs to be done on this point since Shirlaw seems convinced that Rameau was the sole author of this concept.

Weber's Versuch. Certainly it is logical to assume that Weber understood the use of Roman numerals from his teacher Vogler, and by 1817 had devised the more refined symbolization by which he is now known.

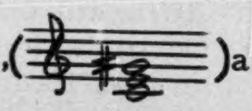
1817 Gottfried Weber. Versuch einer geordneten Theorie der Tonkunst. Mainz: B. Schott, 1817-1821.

This work is evidently the first attempt to show by symbols, the difference between major and minor keys, various kinds of triads, and different types of seventh chords. Weber's symbolization is clear and efficient but it is not complete enough for modern use.[1]

Capital letters are used to indicate major keys and major triads; small letters indicate minor keys or minor triads. The remainder of the system is best shown by a quotation:[2] "We can in this way represent all the harmonies appropriate to each key, by the following form or structure of figures (italics are in the original; quote ends below, after the chart):

In large key: (major)
I, I^7; ii, ii^7; iii, iii^7; IV, IV^7;
V, V^7; vi, vi^7; °vii, °vii^7.

In small key: (minor)
i; °ii, °ii^7; iv, iv^7;
V, V^7; VI, VI^7; °vii.

Note that in the above chart Weber makes no provision for a seventh chord on the tonic in minor, the mediant triad or seventh chord in minor, nor the leading tone seventh chord in minor. His reason for excluding the mediant, for example, is interesting: "I must take occasion here to remark incidentally, that many teachers of composition conceive themselves under necessity of assuming, for the explanation of such harmonic combinations as those in figures 684, 686 and 687, above, () a particular harmony, to which they give the name of 'superfluous threefold chord' (augmented triad). But as every such simultaneous group in every possible case may be explained according to the laws of transitions, inasmuch as every thing applies to the superfluous fifth

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[1] The symbolization was checked in two German and two English editions and minor differences were found. The principles are not different but small discrepancies occur in the placement of the circle (o) and the seven (7); e.g., in the first German edition vii $\overset{o}{7}$, while in the second German edition the same chord is, °vii 7. The 1853 Boston, and the London edition, follow the second practice, and that is the one which is illustrated here.

[2] op. cit. Boston edition (1853) Vol. I, p. 289.

> occurring in such chords that holds good concerning all other approximated transitions, it follows, that, both from these and many other considerations, we have no occasion to increase the number of our seven fundamental harmonies by the addition of an eighth . . ."[1] Riemann says[2] that the plus sign (+) which is now used to show the augmented triad was added to Weber's symbolization by Ernst Friedrich Richter in his Lehrbuch der Harmonie (1853).

From this brief and limited investigation into the history of symbolization some general conclusions can be drawn; they are by no means definitive, and it is hoped that others will explore this interesting history in greater detail.[3]

Music written on a staff and the Arabic numerals of figured bass were apparently sufficient to illustrate points in early treatises. Toward the last quarter of the eighteenth century, authors began to use letters (C, D, E) and syllables (do, re, mi) to refer to keys, chords or tones in the absence of the music itself. Early in the nineteenth century, Vogler used Roman numerals placed beneath music to show an analysis of chord function. Gottfried Weber devised a more refined symbolization showing major and minor keys, and certain types of triads and seventh chords.

As for the present-day books studied, they tend to exhibit one of two general points of view. One group (sixteen books), perhaps following the start made by Weber (but including the augmented triad), uses different Roman numeral symbols for the four basic triad types (I, ii, III+, vii°); the other group (twenty books) uses the large Roman numeral

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[1] op. cit. Boston edition (1853) Vol. II, p. 615.

[2] Geschichte der Musiktheorie im IX.-XIX. Jahrhundert: p. 514.

[3] Besides the systems of symbolization reviewed here, Riemann also gives some other systems--those of Moritz Hauptmann, A. von Öttingen and a system of his own. These are complicated systems and very different from Weber's, and, while they may have had some use in Europe, the fact that they have never appeared in any American theory book suggested that a detailed discussion of them here would be unwarranted.

(as did Vogler) for all triad types. This latter school of thought generally intends the large Roman numeral to represent the diatonic triads in agreement with the key signature, and makes other provisions to show any alterations. An exception to this thinking is found in eight books which use the same Roman numeral symbolization for altered and unaltered chords.

Whatever advantage there was at one time in having different symbols for different triad types, it seems that this largely has been lost today with the greater use of chromatic alteration. That system showed only the four common triad types (major, minor, augmented and diminished) in any case. With the use of other triad types and the addition of sevenths and ninths, this type of symbolization becomes unwieldy, and since it seems unnecessary it will not be recommended.

In the modern theory books studied, there is far less unanimity of opinion about the chord symbol than there was concerning figured bass. For this reason, the results of the comparisons will be reported in greater detail and in substantially the usual order. The symbolization in six of the forty-three books was not pertinent to the chord symbol investigation so the following statistics come from the thirty-seven "traditional harmony" books.[1]

1. Key indication

Capital and small letters for major and minor keys	-	26
Major and minor written out	-	5
No indication of key	-	4
Plus and minus signs	-	1
Capital letters for both major and minor	-	1

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[1] At the end of this section (VII. Analysis of Data and Findings) will be found a comparative chart showing which books used each symbol. Under each concept each book which uses it is identified by the number which appears before the book name in the table of contents. From this chart it is possible to see how this investigator rated each book in arriving at the statistics presented in this section.

Twenty-six books, following Weber's lead used capital and small letters, with or without a colon, to indicate major and minor keys. This system is clear, efficient and well established.

Schenker used C $\frac{\text{major}}{\text{minor}}$ for music that combined both modes. Persichetti uses C center for contemporary music which does not imply the restriction of a seven-tone scale. This is recommended where the reference to major or minor would be misleading.

2. The Roman numeral chord symbol

Large Roman numerals for all chord types	-	20
Large, small, plus and circle	-	16
Large, incomplete (TT), plus and circle	-	1

Only one book recommended symbolizing the leading-tone triad exclusively as oV; thirty-two books preferred to symbolize this chord as VII (or vii^{o}), while four books used both methods. All thirty-seven books add the 7 to the Roman numeral to show seventh chords.

3. Inversions

Arabic numerals from figured bass	-	26
a, b, c	-	1
1, 2, 3	-	4
I, I_3, I_5	-	1
Not indicated by Roman numeral symbol	-	5

The combining of the Arabic numerals from figured bass with the Roman numeral to show inversions was overwhelmingly preferred to any other system; only five of the thirty-seven books chose not to have the Roman numeral show the proper inversion.

4. Placement of the Arabic figures in relation to the Roman numeral.

There was the greatest variation here; some books placed the 7, the inversion figures, and the alteration signs all in different places in relation to the Roman numeral. Some of the possibilities are these:

${}^{13}{}_{7}\mathrm{V}_{b}$	$\overset{7\sharp\natural}{\mathrm{IV}}_{3}$	$\underset{5}{\mathrm{V}}$	V^{7}	$\mathrm{V}_{\substack{6\\5}}$	V^{6}_{5}	$\mathrm{II}_{\substack{6\\ [\sharp 3]^{5}}}$
(Macpherson)	(Goetschius)	(Alchin)	(McHose)	(Kohs)	(Piston)	(Cutter)

Some of the more intricate arrangements were disregarded in arriving at the following general statistics.

Left of Roman numeral	- 1
Directly above Roman numeral	- 1
Directly below Roman numeral	- 4
Upper right of Roman numeral	- 7
Lower right of Roman numeral	- 9
Right (upper right and lower right, or both)	- 12
Not combined	- 3

5. Altered tones

There was also great difference of opinion as to how altered tones would be shown. Some symbols do not show the alterations (eight books); three books show only the triad type by the use of different Roman numerals (${}_{o}\mathrm{ii}$ ii II II^{+}, etc.); however, most (twenty-three books) preferred to show the altered tones in some way.

No alterations shown	- 8
Roman numeral type only (ii II)	- 3
Altered scale degree	- 4
Altered chord member (1, 3, 5, 7)	- 9
Figured bass (actual accidentals)	- 10
Special signs (χ^{6}_{5}, $\grave{\mathrm{iv}}$, $\acute{\mathrm{V}}_{1}$)	- 3

When the altered chord member is used then some additional method has to be devised to show the proper inversion. For example: $\mathrm{II}\substack{6\\4\\ [\sharp 3]^{3}}$. If the figures from figured bass are utilized for this, then the alteration can be incorporated at the same time: $\mathrm{II}\,\substack{\sharp 6\\4\\3}$. Since this seems to be the more economical system, it is the one which will be recommended.

6. Modulation

Eight books discuss modulation but have no special symbolization for it.

No symbolization found - 8
Dual analysis of pivot chord - 15
Old key, new key, but no pivot shown - 6
Both of above methods - 8

The recommended symbolization will utilize the dual analysis of the pivot chord when this is a strong or important chord functionally; in chormatic modulations, the old and the new key will be shown without a dual interpretation of the pivot.

C. NONHARMONIC TONES

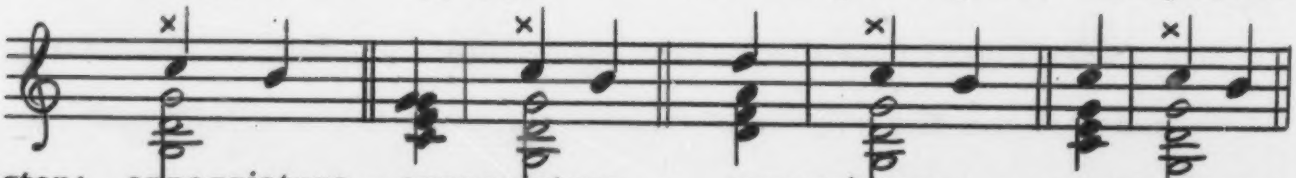
The classification of dissonant non-chord tones has traditionally followed one of two schools of thought. The definition of the nonharmonic tone has been primarily either a "temporal" or a "spatial" relationship to the prevailing harmony, that is, the dissonant tone is described as being "accented" or "unaccented" or else is defined in terms of how it is "approached" and "left."

Obviously both the metric or rhythmic position of the dissonant tone and also the description of how it is approached and left must necessarily be accounted for in any classification system, since these are the two axes present in our system of notation. The difference in the two schools of thought has concerned which of these concepts should be considered as the primary and which the secondary factor in the classification. Since both aspects have to be accounted for, the choice of which is to be considered primary would be largely an academic one, if it were not for some other peripheral matters such as, established custom, precedence, choice of names, applicability to music of different periods, etc., all of which will be subsequently considered.

The readers who are interested in exploring this controversy more in detail will want to read the papers of the Tischler--Turner[1] debate of the 1950's, and, to carry the controversy back to the 1940's, will want to study the Piston (1941) and McHose (1947) harmony books. These have been the most popular and influential texts to champion the opposing views.[2]

It is easy to see that McHose follows older traditions as found, for example, in Goetschius (1895), Tweedy (1928) and Wedge (1930) in recommending definitions of nonharmonic tones which, while taking accent into account, classify the dissonant tone according to how it is approached and left. It is more difficult to see where the ideas of Piston came from; in his book the accented dissonance, whether an initial tone, or approached by leap, approached by step or as a repeated tone, is always called an appoggiatura.

McHose: appoggiatura - appoggiatura - accented passing tone - suspension



Piston: appoggiatura - appoggiatura - appoggiatura - appoggiatura

Piston says (page 85): "All nonharmonic tones are rhythmically weak, with the single exception of the appoggiatura (pl. appoggiature). The derivation of the term (from the Italian verb appoggiare, to lean) gives the best clue as to its character. ---The rhythm of the appoggiatura followed by its note of resolution is invariably strong-to-weak."[1] One wonders why this is invariably so, since it is conceivably possible to "lean" on an unaccented tone also. When an "appoggiatura" does occur as an "unaccented" dissonance, as, of course, it may, then this situation requires another terminology.

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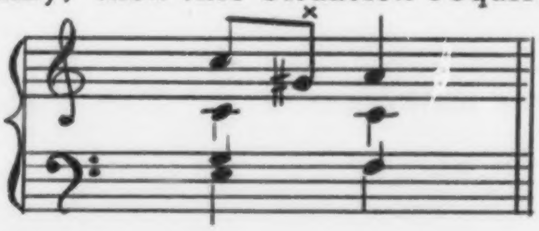
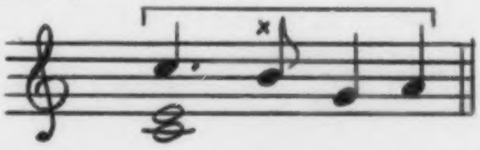
[1] AMS Journal. v. 9, 1956, pp. 57-59. This refers to two papers, one, "A comparison of Two Non-chord Tone Systems" by Hans Tischler was presented at an MTNA meeting in Autumn, 1954, and the other, "More on Non-chord Tones: the Logic of Music Theory Nomenclature" by Thomas Turner was read at an MTNA Midwestern Chapter meeting, Urbana, Illinois, May 8, 1955. Tischler's system, which was apparently the same as that given in Practical Harmony, q. v., advocated the primary classification of non-chord tones according to whether they were accented or unaccented. Turner's proposal advocated that the primary classification be made according to "mode of entrance" and "mode of quitting" which could be by S(tep), L(eap) or P(rolongation); accent (shown by accent marks) was of secondary importance.

[2] While many other books are more-or-less similar to these, in order to make the discussion here more specific, these two texts will be taken as examples.



The term which Piston suggests for this situation is "cambiata." Unfortunately, the term he chose for this was already well established in counterpoint texts to designate a common idiomatic figure in sixteenth-century polyphony.



The dissonant notes, marked with x's in the above two examples, are quite dissimilar, and the use of this term for both situations can only cause confusion. While Piston is free to assign a new and arbitrary meaning to the term "cambiata" in his harmony book, there can be no doubt about the previously well established use of the term for another situation.[2]

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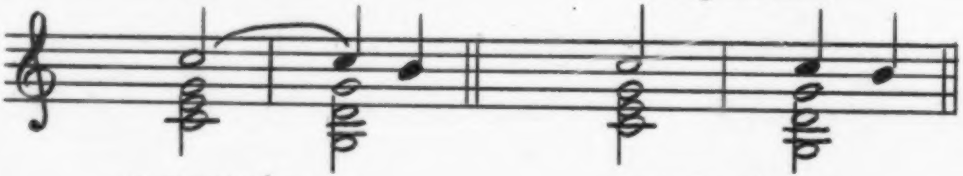
[1] Walter Piston, Harmony (New York: W. W. Norton & Co., Inc., 1962). 3rd ed. Used by permission.

[2] Jeppesen says that the term is first used by Fux in Grades ad Parnassum, 1725. See: Knud Jeppesen, Counterpoint, trans. by Glen Haydon (New York: Prentice-Hall, Inc., 1939). p. 32.

The other point of disagreement concerns the presence or absence of the tie in the suspension figure.

McHose: suspension - suspension



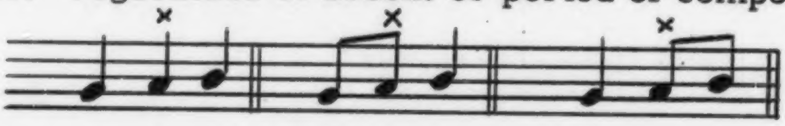
Piston: suspension - appoggiatura

Piston says that if the tone is struck again, rather than being held, it must be called an appoggiatura, even though it is prepared in the same voice in the previous chord. This distinction (which the majority of theory books do not make) could result in two different analyses of the same composition: when it is played on an organ with held tones, and when it is played on a piano where the notes are struck again (because of the lack of the latters sustaining power.)

Except for the differences just noted (concerning the appoggiatura, accented passing tone and suspension) there is very substantial agreement between practically all of the books as to the meaning for the terms passing tone, neighboring tone (also called auxiliary tone or embellishing tone), escape tone (also called echappée), changing tones, anticipation and pedal (also called organ point). Not all of the books use all of these terms, but when they are used there is general agreement as to what they mean. There are exceptions, of course: Forte objects to the names "nonharmonic" and "unessential" and believes that these tones should be called "submetrical embellishments"; Macpherson and Bussler use "passing tone" to describe both the dissonant tone approached and left in the same direction and the one which returns by a change of direction; Salzer avoids the use of the terms "appoggiatura" and "escape tone" by using "incomplete neighbor-note"; Hindemith says, "the neighboring tone is a suspension without preparation"; Salzer's term "passing chord" includes chords approached and left both by step and by skip; Tischler uses the terms "free passing tone" and "free turning tone"; Kohs speaks of "unprepared neighboring notes"; other authors speak of "unprepared suspensions," "free anticipations," "unresolved appoggiaturas" and other special uses or distortions of the basic terms.

It is not the purpose of this study to propose a new or radically different system of nomenclature for nonharmonic tones--even if one could be devised--but rather to discover points of agreement between systems already in use. Of the thirty-seven theory books studied, two made no use of nonharmonic tones, five classified them primarily according to accent, and thirty books made the basic classification according to the way in which the tones were approached and left. Aside from the overwhelming preference shown for this method by these authors, such a method of defining nonharmonic situations is more applicable to the music of many different periods than is a system based upon accent. Piston's concept of defining nonharmonic tones according to accent works very well for tonal music of the "common practice period," but this system leaves much to be desired when applied to the thirteenth-century motet or to contemporary music. Since the syntax is entirely different, the accent in early polyphonic music and in some contemporary music is sometimes not only debatable but next to impossible to define consistently.

It would, of course, be possible to coin a new set of terms for the situations of each different period in music, but to this investigator this seems indefensibly complicated, if a general set of terms can be found to fit all periods. Our recommendations will therefore favor a set of terms based upon the "spatial" relationships between tones, although accent will be accounted for when this is applicable. For example, a note which stands between two different chord tones is a "passing tone," regardless of accent or period of composition.



Such a set of definitions, based upon similar principles, would seem to have the widest possible application to all music, and also apparently has the support of the greatest number of theorists. The detailed definition and example of each nonharmonic device will be found in the recommended symbolizations, VIII. CONCLUSIONS.

D. CHORD SYMBOLS USED IN POPULAR MUSIC

The chord symbols used in jazz probably were arrived at empirically; the system was developed out of experience and the needs of practical performance. In addition to the use of these symbols in popular sheet music, they are also frequently used in dance bands, or commercial orchestras for the writing of piano or guitar parts, and for much the same purpose for which figured bass was used in the seventeenth century. The symbols give the background harmony and the piano or guitar part is improvized in performance rather than being written out in staff notation. That the system is not perfect, is understandable, and while it might be improved upon in several minor respects, it is probably better for its purpose than would be a system based on figured bass and Roman numeral symbols.

The principal advantage of this system is that it shows at a glance, by means of a fairly compact symbol, the correct sonority required in any key.

The deficiencies of the system which are apparent to this investigator are these:

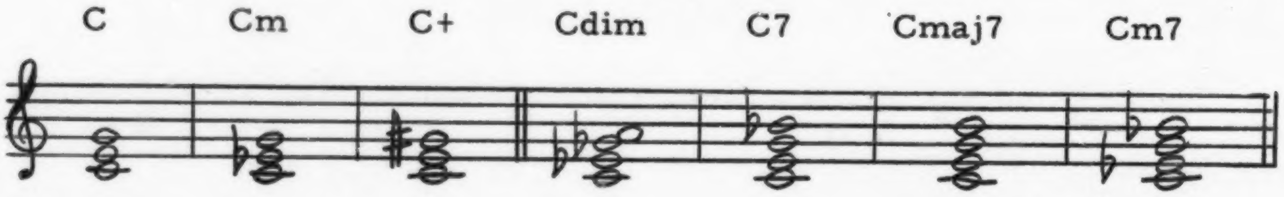
1. The types of sonority available are quite limited.
2. Since the system is oriented toward harmony, any growth in the musical style of popular music in the direction of counterpoint is going to be symbolized with difficulty.
3. Little or no provision is made to show the correct inversion of a chord.

The study of the chord symbols made in Chapter VI shows that these deficiencies have already been felt, and some steps have been taken to remedy them.

The language, or vocabulary of chords, of jazz has become increasingly more sophisticated in recent years. While a small number of symbols was sufficient for popular music just a few years ago, more complex and interesting sonorities are now being used, and symbols showing suspensions and indicating exact bass notes are already in use. This suggests that this symbolization is going to have to find ways of coping with the increasing complexity of popular or commercial music as the public taste becomes more and more discriminating, or it will in time be replaced by a more efficient system.

First, let us list the limited number of sonority types which were found in the sheet music surveyed. These can be cataloged as below, and, theoretically at least, all of these sonorities can be transposed to any of the twelve chromatic pitches. There were seven basic chords to which additions and certain limited alterations were made.

Basic chord types



Additions: 6, 9, 11, 13

Alterations: +5, -5, -9, +11[1]

While all of these sonorities may occur in theory on every pitch, we know from the survey that, in fact, certain preferred notations occur and certain other notations are not used. Only certain chord types occur on certain tones. The reason for this lies to some extent in our notation system, but perhaps is more due to the fact that jazz is a commercial product which must be made as accessable as possible to the largest number of people. In order to reach the most people, many of whom have a limited knowledge of music theory, publishers have wisely avoided unnecessary difficulties in the writing of music. Distant key signatures with a great number of sharps or flats are not used, and flat keys seem to be preferred to sharp ones. Chords are spelled enharmonically in order to avoid the use of double sharps or double flats. For example, the diminished seventh chord on C is not spelled C, E♭, G♭, B𝄫, but is written C, E♭, G♭, A, or as one of the other enharmonic spellings. This avoidance of the unusual extends also to certain tones which rarely occur, such as E♯ and B♯. It is for this reason that certain types of chords were found only notated in one particular way. For instance, a minor triad or seventh chord may be found on C♯, but a major chord on C♯ is not found. The major seventh chord C♯, E♯, G♯, B will be written enharmonically as D♭, F, A♭, C♭. Since the enharmonic spelling is perfectly satisfactory this appears to be a practical and desirable limitation. In addition to the basic chord types, other conclusions which we can draw from the music studied are these:

---

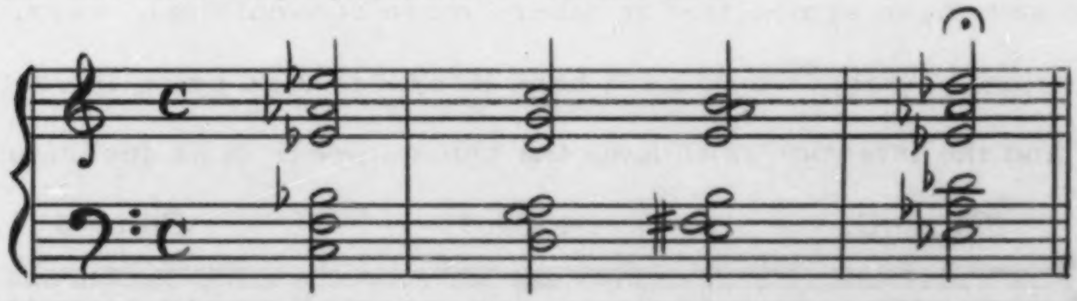
[1] The augmented eleventh was not found in the limited number of samples studied, but it is included here because it is an alteration which does occur.

1. Keys with a small number of sharps or flats in the signature are preferable to more distant keys.
2. Flat keys are preferred to sharp keys.
3. Major triads, major triads with added sixth and major seventh chords will be written on the following twelve scale degrees:

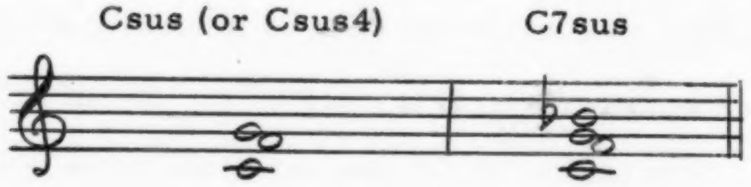
   C D♭ D E♭ E F G♭ G A♭ A B♭ B
4. Minor triads, minor triads with added sixth and minor seventh chords will be written on the following twelve scale degrees:

   C C♯ D E♭ E F F♯ G A♭ A B♭ B
5. Augmented triads, diminished seventh chords and altered seventh chords will use spellings which avoid double sharps or double flats.

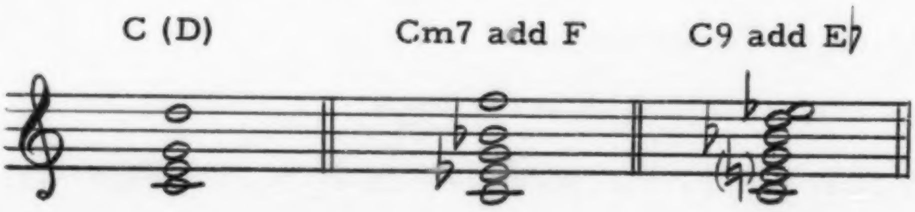
Certain non-triadic chord types are now beyond this kind of symbolization. The following progression of fourth chords, for instance, can not be easily symbolized at this time.



However, the above sonorities are not beyond the realm of possibility of musical use in this style. A step toward the symbolization of other sonority types, as well as a gesture toward a more contrapuntal style was taken with the chord symbol showing the 4 3 suspension.

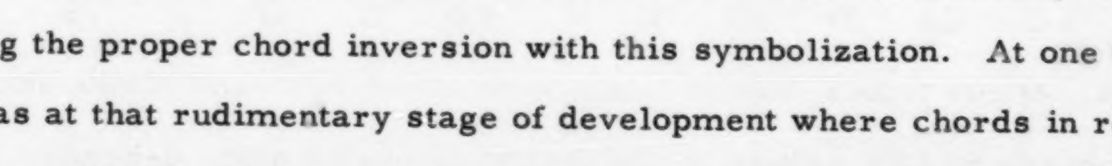


Other possibilities lie in the further development of symbols which show added tones. The following were among those found:



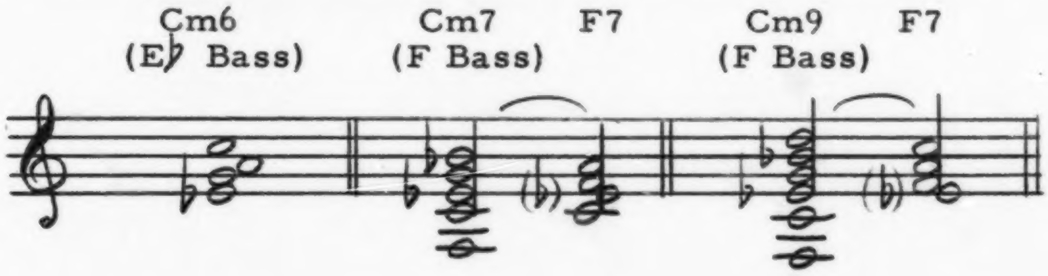
The final point which must be discussed involves the difficulty of showing the proper chord inversion with this symbolization. At one time jazz was at that rudimentary stage of development where chords in root position sufficed. This is no longer the case, so arrangers are seeking ways of getting the performer to play, not only the right chord, but also the right bass note.

It is apparent from a study of the chord symbols that the performer is expected to use the letter name of the chord symbol as the bass note. This is confirmed by the following chord symbols which produce chords that could have been symbolized in other, more conventional, ways, but the conventional symbol would have been interpreted as being in root position, and the intention is to have the chord appear in an inversion.



(An A minor chord in 1st inversion) (An A♭ major chord in 1st inversion) (An F seventh chord in 2nd inversion)

Another, more direct, way of coping with this problem of inversion, and also the contrapuntal problem of a double suspension, is to indicate beneath (or after) the chord symbol what tone should be played in the bass.



This would appear to be a less devious way of solving the problem of inversion, and if it were universally followed, would take care of, not only the problem of inversion, but also pedals and other nonharmonic devices, as well as sonorities which are not conventional chord inversions.

Among the various symbols found there were several cases where a concept would be symbolized in slightly different ways by different publishers. While these differences were very slight, for example C7+ or C+7, they had to be resolved before any recommendations toward standardization could be made. The frequency of occurrance was not a reliable guide here, in the light of the small number of samples available for study. Other factors, such as clarity, compactness, lack of ambiguity, etc. were taken into consideration in arriving at the recommended symbolization which appears in the final chapter.

CHECK LIST SHOWING CONCEPTS FOUND IN EACH THEORY BOOK

1. Numbers identify the books as they are listed under V. THE BOOK ABSTRACTS in the TABLE OF CONTENTS.
2. Where more than one concept appeared in the same book, the primary use is shown by the number, the secondary uses by numbers in parentheses; the latter were not counted in the statistics.
3. The following Special Area Books were not counted: 4, 7, 12, 17, 20, 29. Books in each block add up to 37.

A. FIGURED BASS	
Figures above the bass - 4 books 9, 15, 18, 39	4
Figures below the bass - 24 books 1, 2, 6, 8, 11, 14, 16, 19, 21, 22, 23, 24, 25, 27, 28, 30, 31, 32, 33, 34, 37, 41, 42, 43	24
Both - 1 book 26, (35)	1
Figured bass not used - 8 books 3, 5, 10, 13, 35, 36, 38, 40	8 37
3. Altered tones in figured bass a. An accidental without a figure refers to the third above the bass tone.	
Used - 26 books 1, 2, 6, 8, 9, 11, 14, 15, 16, 18, 19, 21, 22, 23, 24, 25, 27, 28, 30, 32, 33, 34, 37, 39, 41, 43	26
Not advocated - 2 books 26, 31	2
None found - 9 books 3, 5, 10, 13, 35, 36, 38, 40, 42	9 37
b. Accidentals - numerals	
Precede - 18 books 2, 6, 15, 16, 19, 21, 22, 23, 24, 25, 26, 27, 28, 31, 32, 34, 37, 43	18
Follow - 10 books 1, 8, 9, 11, 14, 18, 30, 33, 39, 41	10
None found - 9 books 3, 5, 10, 13, 35, 36, 38, 40, 42	9 37

c. Special signs ($\not 6$, $6\!\!\!\!|$, 4 , etc.) Used - 15 books 2, 6, 11, 14, 16, 18, 21, 23, 27, 28, 30, 32, 33, 39, 43 Not used - 12 books 1, 8, 9, 15, 19, 22, 24, 25, 26, 31, 37, 41 None found - 10 books 3, 5, 10, 13, 34, 35, 36, 38, 40, 42	15 12 10 $\overline{37}$
4. Nonharmonic tones in figured bass a. Indicated by spacing and vertical alignment - 25 books 1, 6, 8, 9, 14, 15, 16, 18, 19, 21, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 37, 39, 41, 43 None found - 12 books 2, 3, 5, 10, 11, 13, 22, 35, 36, 38, 40, 42	25 12 $\overline{37}$
b. Long dash = held or repeated note - 18 books 1, 6, 14, 16, 19, 21, 23, 25, 27, 28, 30, 31, 32, 33, 37, 39, 41, 43 None found - 19 books 2, 3, 5, 8, 9, 10, 11, 13, 15, 18, 22, 24, 26, 34, 35, 36, 38, 40, 42	18 19 $\overline{37}$
c. Short dash between two figures = same voice - 5 books 1, 26, 31, 37, 40 None found - 32 books 2, 3, 5, 6, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 21, 22, 23, 24, 25, 27, 28, 30, 32, 33, 34, 35, 36, 38, 39, 41, 42, 43	5 32 $\overline{37}$
B. Chord Symbols 1. Key indication: Large and small letters and colon - 16 books 1, 3, 5, 9, 11, 18, 21, 22, 23, 28, 31, 32, 33, 38, 40, 42 Large and small letters, no colon - 10 books 10, 13, 14, 16, (18), 19, 24, (27), 36, 37, 39, 41 Written out - 5 books 2, 6, 8, (22), 25, (27), (31), (35), (39), 43 Plus and minus signs - 1 book 26 All large letters - 1 book 30 None used - 4 books 15, 27, (31), 34, 35	16 10 5 1 1 4 $\overline{37}$

CHECK LIST SHOWING CONCEPTS FOUND IN EACH THEORY BOOK (continued)

C. Nonharmonic tones	
Defined as accented and unaccented - 5 books 30, 31, 37, 40, 41	5
Defined as approached and left - 30 books 1, 3, 5, 6, 8, 9, 10,13, 14, 15, 16, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 32, 33, 34, 35, 36, 38, 39, 42, 43	30
None found - 2 books 2, 11	$\frac{2}{37}$
2. Roman numerals	
All large - 20 books 6, 8, (11), 13, 15, 16, 19, 21, 23, 24, 25, 26, 27, 30, 31, 34, 35, 36, 37, 42, 43	20
Large, lower-case, + and o - 11 books 1, 2, 5, 11, 22, 28, 32, 33, 38, 40, 41	11
Large, small, + and o - 5 books 9, 10, 14, 18, 39	5
Large, incomplete, + and o - 1 book 3	$\frac{1}{37}$
Leading tone chord symbolized:	
As VII or vii^o - 32 books 1, 2, 3, 6, 8, 9, 10, 11, 13, 14, 15, 18, 19, 22, 23, 24, 25, 26, 27, 28, 31, 32, 33, 34, 35, 36, 37, (38), 39, 40, 41, 42, 43	32
As oV^7 - 1 book 16, (30)	1
As both - 4 books 5, 21, 30, 38	$\frac{4}{37}$
3. a. Inversions shown by:	
Figured bass numerals - 26 books (1), 2, 3, 5, 8, 9, 10, 11, 13, 15, 18, 19, 21, 22, 24, 26, 27, 28, 30, 31, 33, 34, 36, 37, 39, 40, 41, (43)	26
I_a, I_b, I_c - 1 book (10), 25	1
I_1, I_2, I_3 - 4 books (1), 16, 38, 42, 43	4
I, I_3, I_5 - 1 book 1	1
Not shown - 5 books 6, 14, 23, 32, 35	$\frac{5}{37}$

b. Placement of Arabic figures around Roman numeral:	
To left - 1 book 25	1
Directly above - 1 book 16	1
Directly below - 4 books 1, 3, 11, 38	4
At upper right - 7 books 2, 5, 15, 23, 30, (31), (33), 34, (35), (38), (40), 42	7
At lower right - 9 books 8, 10, (16), 19, 21, 22, (26), 27, 28, 37, (39), (41), (42), 43	9
Directly to right (or both upper and lower right) - 12 books 9, 13, 18, (21), 24, 26, (28), 31, 32, 33, 36, 39, 40, 41, (43)	12
Not shown - 3 books 6, 14, (23), (32), 35	3 37
5. Altered tones (Chord symbol):	
Shown by figured bass - 10 books 3, 15, 24, 26, 31, (32), 33, 37, 39, 40, 41	10
Shown by chord member (1, 3, 5, 7) - 9 books 1, 9, 10, 18, 21, 25, 28, (33), 34, 35, (36)	9
Shown by scale degree - 4 books 2, 5, 16, 23	4
Shown by Roman numeral type only - 3 books (5), 14, 22, (28), 32, (40), (41)	3
Shown by special signs - 3 books (24), 38, 42, 43	3
Not shown - 8 books 6, 8, 11, 13, 19, (26), 27, 30, (31), (35), 36, (43)	8 37
6. Modulation	
Dual analysis of pivot chord - 15 books 1, 15, 22, 24, 25, 26, 30, 31, 32, 33, 35, 36, 37, 40, 41	15
Old and new key shown, but no pivot chord - 6 books 9, 10, 13, 19, 27, 43	6
Both - 8 books 2, 5, 16, 18, 21, 23, 28, 42	8
None symbolized - 8 books 3, 6, 8, 11, 14, 34, 38, 39	8 37

Texts used by 4 or more of 228 schools in the NASM listed in order of frequency.	Figured Bass							Key		Modulation	CHORD SYMBOL		
					Special Signs						Roman numerals		
Author-Sch.'s	Fig. below bass	Fig. above bass	Acc. precede fig.	Acc. follow fig.	Acc. alone	Slanting St.	Other	Major	Minor		All Large	Large, Small, + and o	Other
Piston 91	x			6♭	#	6̸	6	C:	A:	C:I{C: VI A: I IV	I II		
McHose 75	x		♭6		#	6̸		C:	a:	C: I VI a: I IV	I II		
Ottman 47	x		♭6		#	6̸		C:	a:	C: I vi a: i iv		I ii	
Kohs 18	x		♭6		#	6̸	4	C:	a:		I II		
Hindemith 15	x		♭6		#			C	a	C I a I IV	I II		
Forte 13		x	♭6		#					VI/I IV I VI	I II		
Persichetti 11	x			6♭				C center: A center:		C center: →A center:	I II		F^7D^9
Wedge 11	x		♭6		#	6̸		C-major	a-minor	C-major a-minor I I IV	I II	also: CdE^+b^o	F^{+L7}
Heacox 10		x		6♭	#	(6̸)		C	a	CI{ VI a I IV		I II	
Sessions 10	x		6					C	a	C I VI a I IV	I II		
Dallin 8								C major	A minor		I II		
Elliott 8								C	a minor	C I a I IV (Minor)	I II		
Laycock and Nordgren 7	x		♭6		#			C;	a:	C: I vi a: i iv		I ii	
Murphy and Stringham 7	x		♭6		#	6̸		C	a	aI	I II		C_6G_7
Reed 7	x		♭6		#	6̸		C:	a:	C: I vi a: i iv		I ii	
Bockmon and Starr 6								C:	a:	C: I vi a: i iv		I ii	
McKinley 6	x		♭6		#			C	a	C I $\boxed{\begin{matrix}VI\\I\end{matrix}}$ a IV	I IIL		
Robinson 6	x			6♭	#	6̸		C:	a:	C: I vi a: i iv		I ii	
Salzer 5											I II		
Smith and Krone 4								C:	a:			I ii	

CHORD SYMBOL											
				Altered tones							
Inv. not shown	Inversion shown	Inversion shown	Leading tone triad	Not shown	Alt. scale deg.	Figured bass numerals	Altered chord member (1, 3, 5, 7)	Other	Secondary dominants	Neapolitan 6th	Augmented 6th
	Triads	7th									
	I^6 I^6_4	V^7 V^6_5	V^9_7 VII	x				$(V^{8}_{9\flat})$	V^7 of V V^6_5 of III	$II^{6\flat}_{3\flat}$ N^6	$IV^{6\sharp}$ $II^{6\sharp}_{\substack{4\\3}}$
x		V^7	VII VII^7		$\substack{V\\ \sharp\\ 7}$				$\substack{II^7\\ \sharp\\ 4}$	$\substack{II\\ \flat\ \flat\\ 2\ 6}$	$\substack{IV\\ \sharp\\ 4}$ $\substack{II^7\\ \sharp\\ 4}$
	I_6 $I_{\substack{6\\4}}$	V^7 $V_{\substack{6\\5}}$	vii^o vii^{d7}			I^{-7} $I^{-7}_{\substack{6\\5}}$		II ii II^+ ii^o	II^7	$\flat II_6$ (N_6)	It. 7G 7F ♯iv ♯iv ii
	I_6 $I_{\substack{6\\4}}$	V^7 $V_{\substack{6\\5}}$	VII oV^7				$IV^{\sharp 3}_{\substack{6\\4}}$ $V^{\flat 3}_{\substack{4\\3}}$		V of V	$\flat II_6$	$O\sharp IV^{\flat 7}_{\substack{6\flat 3\\5}}$ (or) A_6
	I_6 $I_{\substack{6\\4}}$	V_7 $V_{\substack{6\\5}}$	VII VII_7	x						Neap. II_6	aug. $^6_5$, aug. $^{\substack{6\\4\\3}}$
	I^6 I^6_4	V^7 V^6_5	VII VII^7			$V^{\natural}$ $\flat VI^{\flat 5}$			[V] V	N^6	IV^{+6} II^{+6}
	I_6	$V_{\substack{4\\3}}$		x							
	C1 C2 I_6 $I_{\substack{6\\4}}$	G^7 G^7_1 V^7 $V_{\substack{6\\5}}$	VII VII^7	x		Altered chords are expressed by spec. symbols.			X, X7 O7, Ø7	§6	$\dagger 6$, $\dagger^{6}_{\substack{4\\3}}$, $\dagger^{6}_{5}$
	I^6 I^6_4	V_7 $V_{\substack{6\\5}}$	$\underline{\overline{VII}}^o$ $\underline{\overline{VII}}^{o7}$				$\underline{\overline{II}}^7$ $\underline{\overline{II}}^6_5$ $\underline{\overline{VII}}^7$ [3♯] [5♭] [7♭]		$\underline{\overline{II}}_7$ $\underline{\overline{V}}$ [3♯]		
	$I6$ $I6_4$	V_7 $V_{\substack{6\\5}}$	VII VII_7			$II^{6}_{\flat 3}$ $I^{\flat 7}$ $II^6_{\sharp}$ = Raised bass note			V of V	$\flat II_{\flat 5}$	$\sharp IV_6$, $II^{\sharp 6}_{\substack{4\\3}}$, $\sharp IV^6_5$
		V^7									
	$I6$ $I6_4$	V_7 V^6_5		x							
	$I6$ $I6_4$	$V7$ V^6_5	vii^o $vii^{o7}\flat$					II ii II^+ ii^o	(V) V	$\flat II$	
	$I6$ $I6_4$	V_7 V^6_5	VII VII^7	x							
x	I	V7	vii^o vii^{o7}			$(IV\flat 7$ $iv\flat 7)$		II ii II^+ ii^o	$\frac{V7}{V}$	N6	It. 6 F6 G6
	I^6 I^6_4	V^7 V^6_5	vii^o or $V7$		$\substack{V^7\\ \natural\\ 2}$			(II ii II^+ viio)	II^7	N^6	It. $\cancel{6}$ Fr. $\cancel{6}$ Ger. $\cancel{6}$
	I^6 I^6_4	V^7 V^6_5	L7 ø7			$II^{6}_{\flat 3}$			V^7/V	N^6	$+6$ $^{+6}_{\substack{+4\\3}}$ $^{+6}_{5}$
	I^6 I^6_4	V^7 V^6_5	vii^o $vii^{o7}\flat$			$V^{\substack{4\\3\flat}}_{2}$ $I^{7\flat}_{1\sharp}$			$\frac{V^7}{V}$	N^6	$+6$ $^{+6}_{\substack{+4\\3}}$ $^{+6}_{5}$
	I^6 I^6_4	V^7 V^6_5	VII VII^7	(x)			$V^{\flat 7}$ $V^{\flat 9}$ $II^7_{\flat 5}$		II ↷ V	IIphr	
	$\substack{I\\1}$ $\substack{I\\2}$	V^7_2 V^7_3	V^7_0 V^9_0					$\substack{ii\\ \downarrow\\ v}$ $\frac{\overline{II}}{\overline{V}}$			

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VIII. CONCLUSIONS - THE RECOMMENDED SYMBOLIZATION

After a thorough study of the different symbolizations currently being used, we must now recommend those which would seem to be most useful for standardization. It is self-evident that the choice in each case is the personal opinion of this investigator, and, it seems inevitable that there will be something less than universal agreement with these conclusions, whatever they may be.

Decisions generally fall into one of two categories, and the criteria for choosing a symbolization were different for each. For certain practices there was widespread agreement, as for example, the question of whether or not to combine Arabic numerals from figured bass with the Roman numeral. This is a common practice which seems to represent the general consensus of opinion among present-day theorists; in these cases the commonly accepted practice was recommended. On the other hand, there are practices in which there is no clearly preferred symbolization and many in which the choice seems to be either arbitrary or immaterial. For instance, in deciding exactly where the Arabic numerals are to be placed in relation to the Roman numeral, there seems to be no overwhelming advantage offered by any one of the many possibilities.

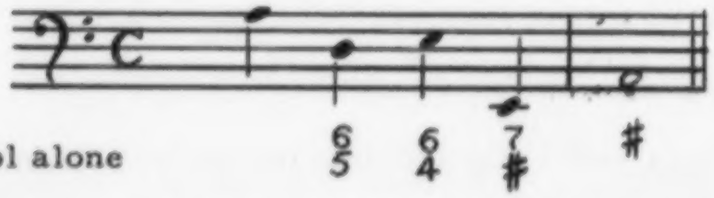
In these cases a decision was made on the basis of common sense and convenience, my aim being to recommend a simple and clear symbolization which would still convey, accurately, the necessary information.

GENERAL RECOMMENDATIONS

The various categories of symbols may be used either separately or combined in whatever ways seem most useful.

1. Figured bass alone

There may be occasions when the Arabic figures below a given bass part are pertinent, and the Roman numerals, showing chord function, are superfluous. In such cases figured bass alone would be used, following the specific details which are outlined below.



2. Chord symbol alone

There may be other cases in which it is necessary to show only the chord functions in a chord progression of tonal music, and in which case the inversions, shown by the Arabic numerals, are unnecessary. For such instances, the chord symbols alone, following the details given below, would be used.

C: I II^{7} I V^{7} I

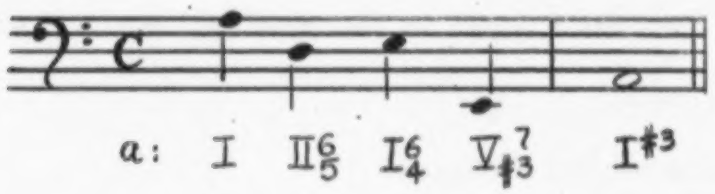
3. Figured bass and chord symbol combined

In most cases, for purposes of analysis, it will be more precise and meaningful to combine the Arabic figures, showing the exact chord inversion, with the necessary Roman numerals, showing the chord function. In all cases where figured bass and chord symbol are combined:

a. The Arabic figures are placed to the right of the Roman numeral, beginning with the largest figure at the upper right corner and continuing downward.

V^{7} I^{6} I^{6}_{4} $\mathrm{V}^{6}_{\substack{4\\2}}$

b. The Arabic figures should be precisely those which would occur under the bass part in the given key; that is, they should show the necessary alterations. See below for the exact details.

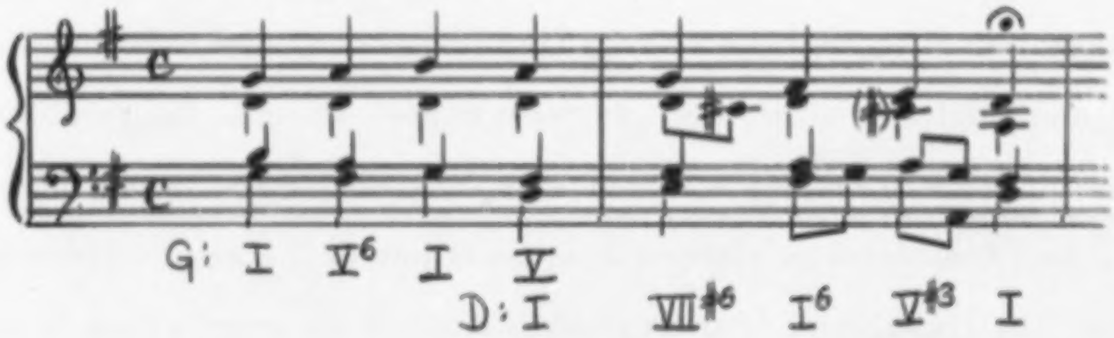


4. The figured bass and the chord symbol, or both, are placed below, rather than above the bass line.

5. Three different modulatory situations are commonly found:

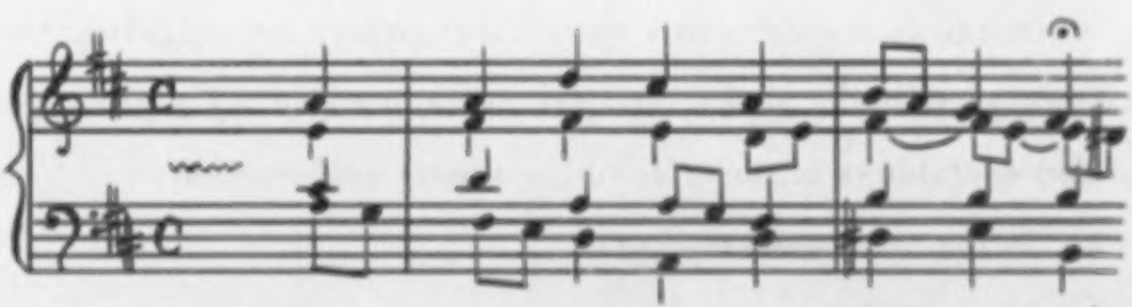
a. Common chord - A chord which is common to two keys is symbolized in both; the Roman numerals of the new key are placed on a different level from those of the old key.

Freu'dich sehr, o meine Seele



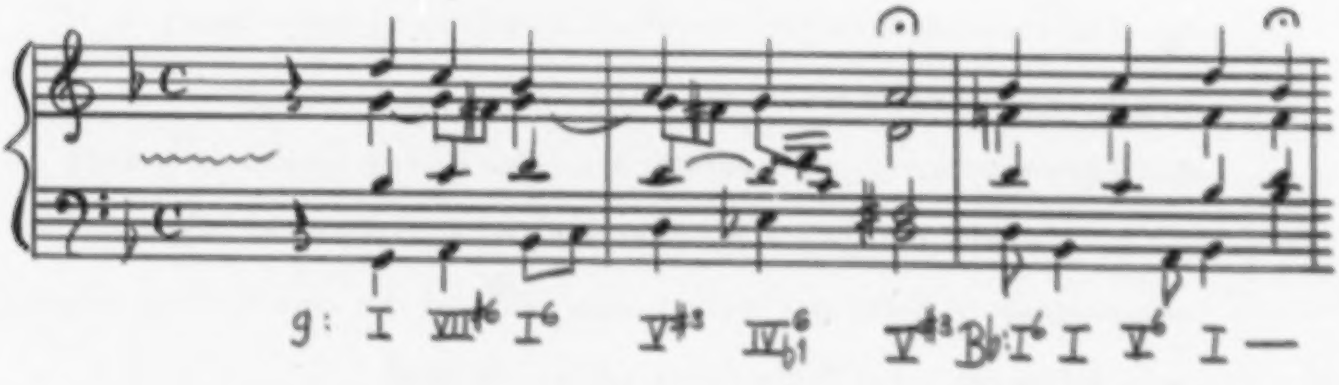
b. Chromatic - When there is a chromatic inflection in one, or more, parts, the analysis begins in the new key at that point, without showing the dual analysis of a common chord.

Gott der Vater. (5th phrase)



c. Direct - A new phrase may begin directly in a new key; the chord symbol analysis may begin in the new key without showing a common chord analysis.

Schaut, ihr Sünder. (2nd and 3rd phrases)



In the cases of (b.) Chromatic and (c.) Direct it is, of course, possible to show a dual interpretation of a common chord, and in many cases it may be meaningful to show this. In most cases, though, the symbolization of the pivot chord will involve a rather complicated symbol, since the common chord will be chromatically altered in at least one of the keys. However, in such cases, the complexity of the symbolization of the pivot chord is itself some indication of the relative distance which separates the two keys.

At this point no attempt is being made to evaluate "modulation versus altered chord" theories, but only to establish the mechanics of symbolizing modulation once it has been established that one has taken place.

6. While the following terms were not formally investigated, they were encountered in many books, and are recommended for general adoption. The logic and usefulness of these symbols seems self-evident.

a. In the naming of intervals:

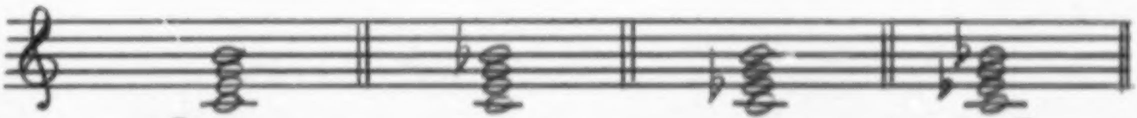
M = major
m = minor
A = augmented
d = diminished
P = perfect

These qualitative symbols are combined with the quantitative numbers to indicate intervals: P5, A4, m6, M3, d5, etc.

b. The first four letters may also be used to abbreviate triad types.

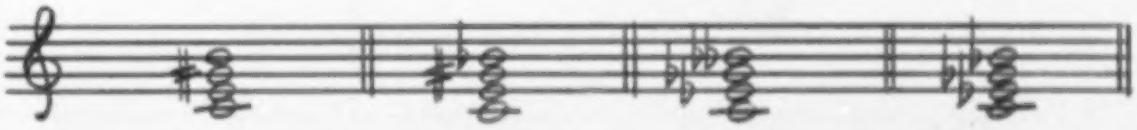
c. The logical extension of this was found in certain books (Laycock & Nordgren, Reed, McHose, etc.) to accurately describe seventh-chord types. Two terms are used, the first refers to the type of triad the second to the kind of seventh; when two like letters occur they are combined.

Symbolized:	MM^7	Mm^7	mM^7	mm^7



Abbreviated:	M^7 chord	---	---	m^7
Called:	major seventh chord	major-minor seventh chord	minor-major seventh chord	minor seventh chord

Symbolized:	AM^7	Am^7	dd^7	dm^7



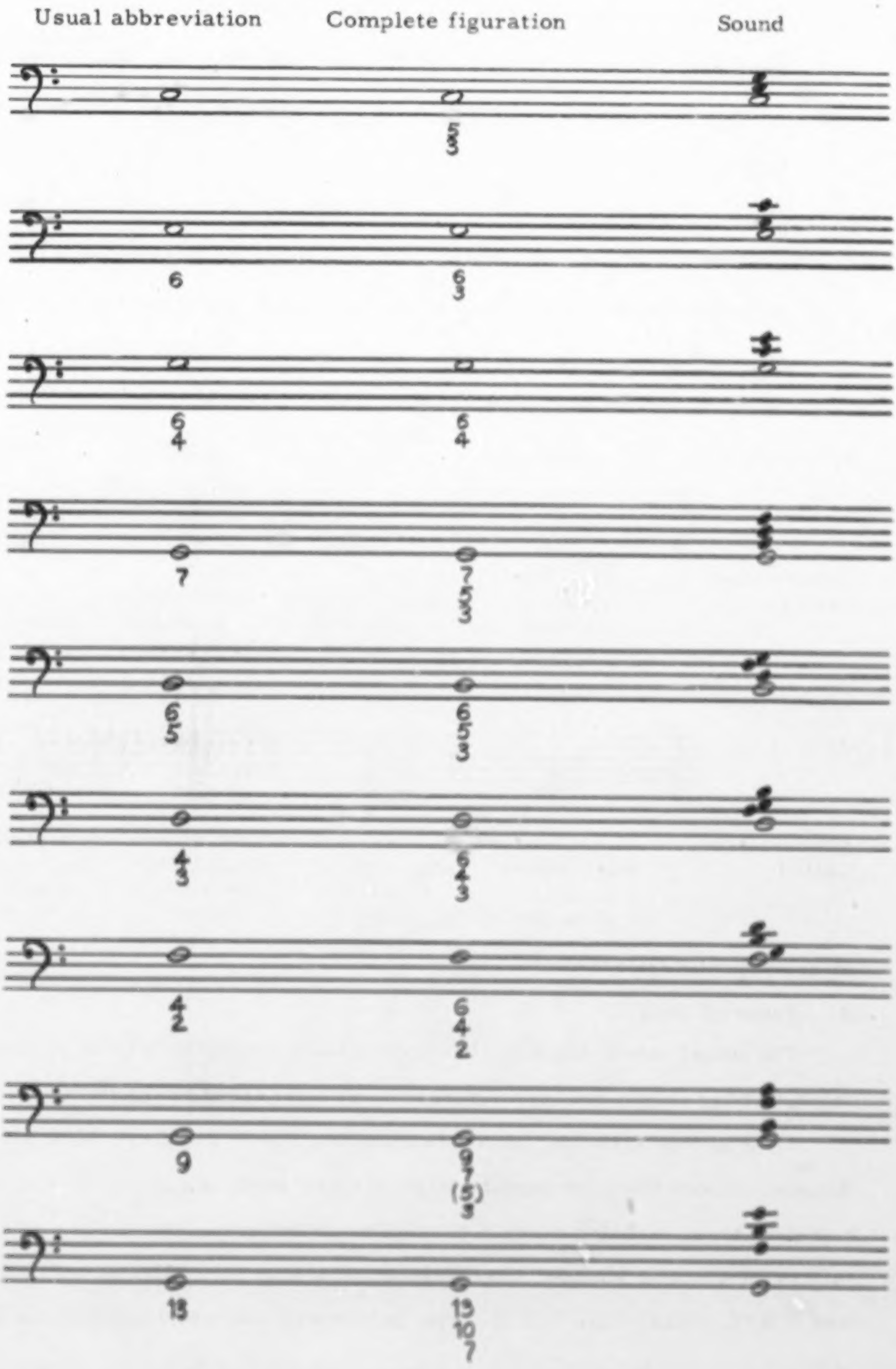
Abbreviated:	---	---	d^7	$1/2d^7$
Called:	aug.-major seventh chord	aug.-minor seventh chord	diminished seventh chord	half-dim. seventh chord

SPECIFIC RECOMMENDATIONS

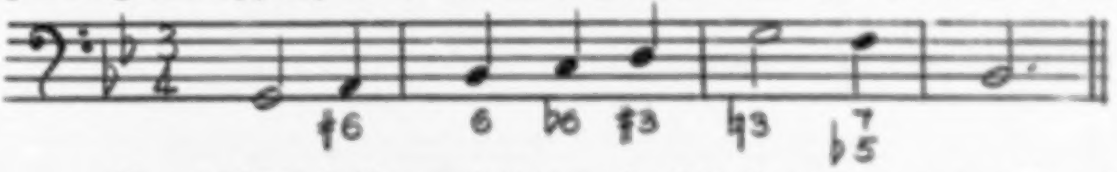
A. Figured bass

The usual conventions of the figured bass system are to be followed; the following points are enumerated in the interest of uniformity.

1. Figures show the intervals sounding above the given bass part. Simple, rather than compound, intervals are used, since there is no attempt to show in which voice a particular interval occurs nor the precise octave in which it sounds. Exceptions: 9 8 may be used instead of 2 1, and 7 8 9, rather than 7 1 2. The customary abbreviations are as follows:

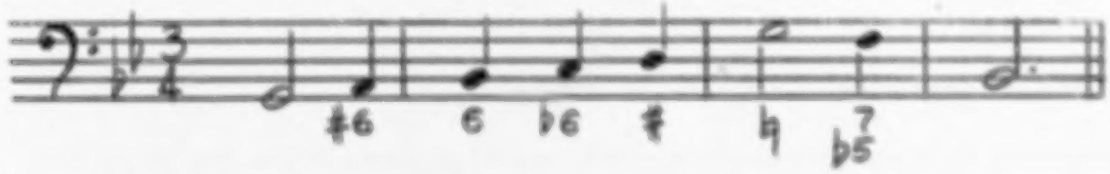

Usual abbreviation
Complete figuration
Sound
5 3
6
6 3
6 4
6 4
7
7 5 3
6 5
6 5 3
4 3
6 4 3
4 2
6 4 2
9
9 7 (5) 3
13
13 10 7

2. Alterations from the printed key signature are indicated by placing the appropriate accidental before the Arabic numeral.

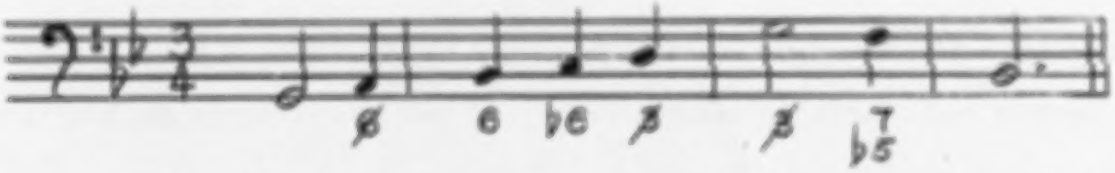


Two abbreviations of this principle have been sanctioned by long usage. They are:

3. An accidental which is not followed by a figure refers to the third above the bass note. The previous example might also have been written:

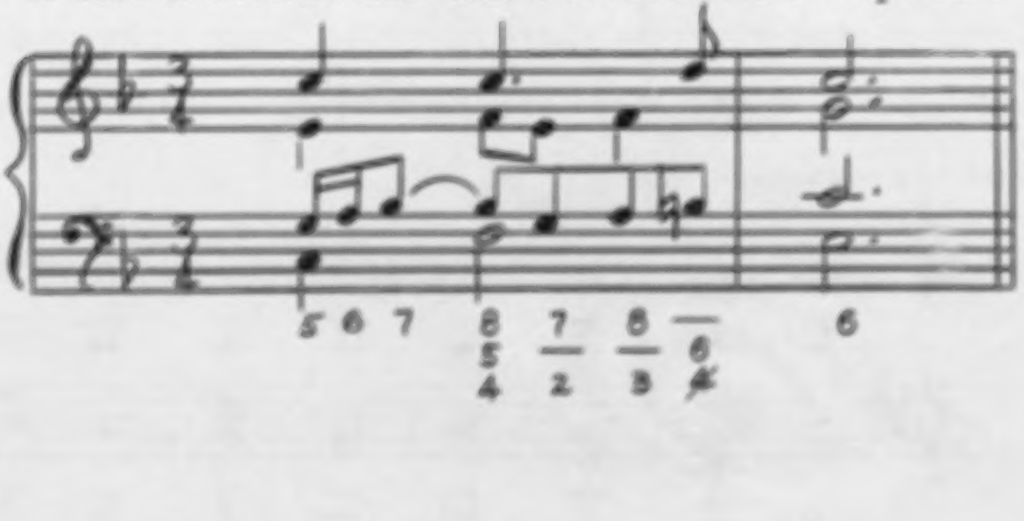


4. A diagonal stroke placed through a figure, from upper right to lower left, may be used to indicate an interval which is raised a chromatic half-step. The previous example could also be written:

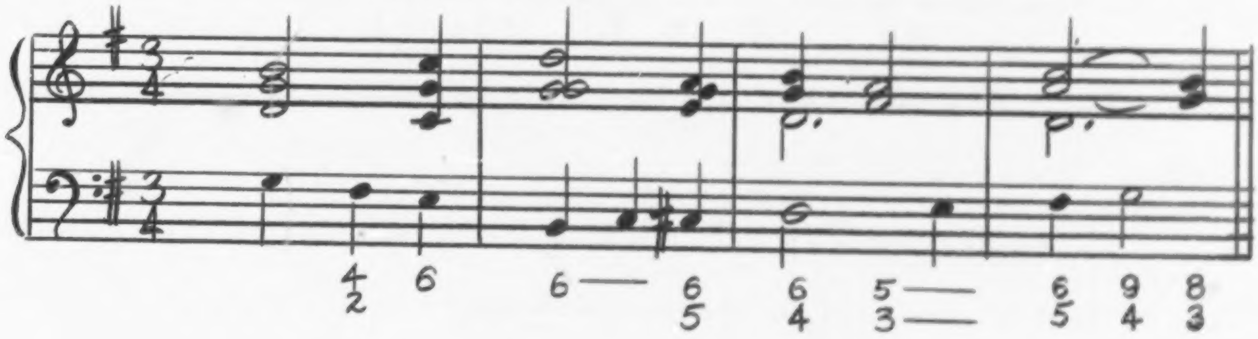


5. Melodic motion in upper parts should be shown by the figures. While no attempt is made to show exact rhythmic values, the figures should show the relative position of the upper parts by spacing and vertical alignment.

A dash is used to show that a tone is held or repeated. For example:



6. To avoid confusion with a root position chord a nonharmonic tone which occurs in the bass voice should be figured, or the continuation of the previous chord indicated by dashes.



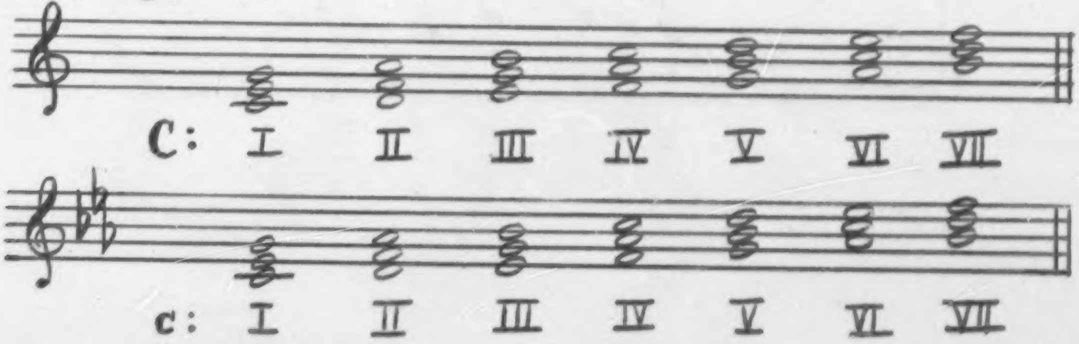
B. The chord symbol

The greatest discrepancies between current practices occur in the details of the chord symbol. The possibilities have all been reviewed in Chapter VII, and we must now choose from these.

1. Since scale degrees are numbered in relation to a tonic, this point of reference must first be established. Capital letters will represent major keys; small letters will indicate minor keys. If the key-note is an altered tone, the accidental will follow the letter. A colon is placed after the key indication.

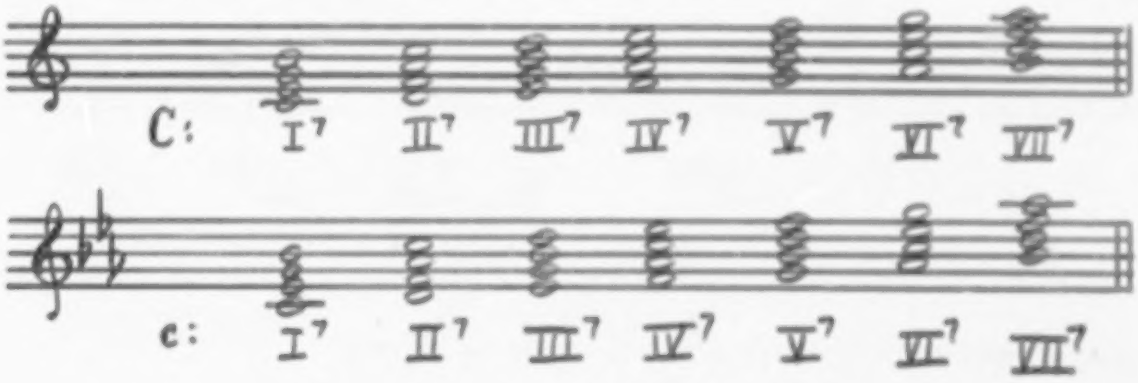
C: - Key of C major
c: - Key of C minor
B♭: - Key of B flat major
f♯: - Key of F sharp minor

2. Functional harmony is symbolized by Roman numerals representing the scale degree upon which the chord is built. Large Roman numerals are used for all types of triads; these are the diatonic triads in agreement with the printed key signature.



No real advantage is offered by using different kinds of symbols for the four common types of triad, and that system becomes extremely unwieldy when it is extended to chromatically altered seventh and ninth chords.[1]

3. The addition of a 7 to the upper right of the Roman numeral adds that diatonic interval to the diatonic triad. A similar symbolization may be used for ninth, eleventh and thirteenth chords.



The triad and seventh chord built upon the leading tone are to be symbolized VII and VII^7, like every other chord; they are not to be symbolized as part of the "incomplete" dominant seventh or ninth chord.

4. The exact inversion of a triad or seventh chord may be shown by combining the correct figures from figured bass with the Roman numeral. These are placed to the right of the Roman numeral, beginning with the largest figure at the upper right corner and continuing downward.

I^6 II^6_4 V^4_3 $V^{6}_{\substack{4\\2}}$

5. Any alteration, different from the diatonic version of the chord should be shown by the chord symbol. While many special systems have been devised to show alterations, these systems are superfluous, since we already have the well established system of figured bass. Exactly the same accidentals and figures used in figured bass are combined with

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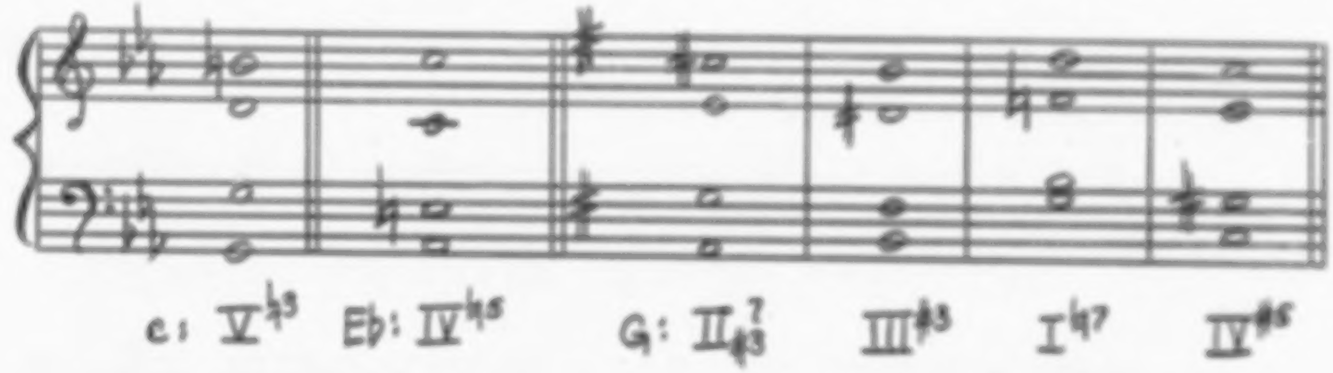
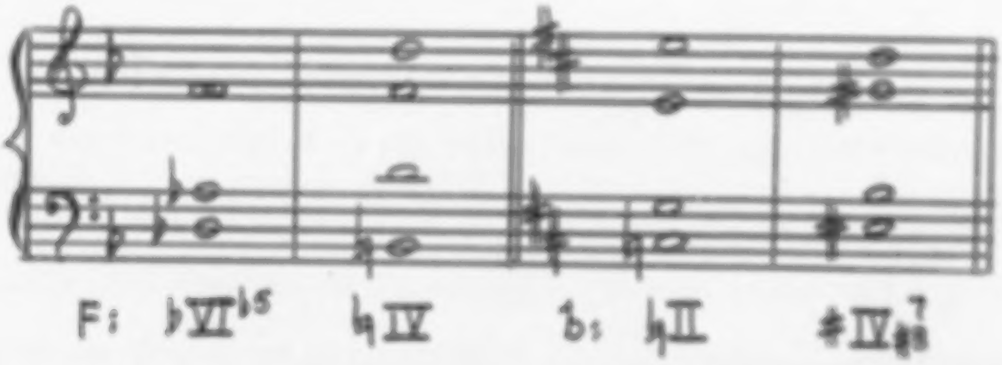
[1] Such a system, in any case, does not show all of the possible types of triads, but only the four traditional ones: major, minor, augmented, and diminished.

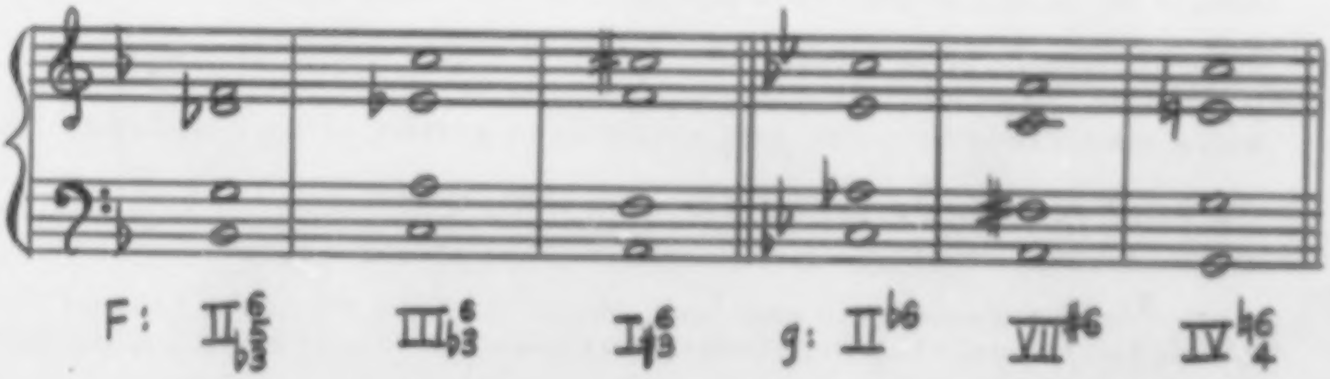
the Roman numeral. However, to avoid any confusion, it is recommended that an accidental not be used alone, but should always be followed by the figure 3; the use of the diagonal stroke (♪) is also not recommended here. Alterations to the third, fifth or seventh of a root position chord would be indicated:



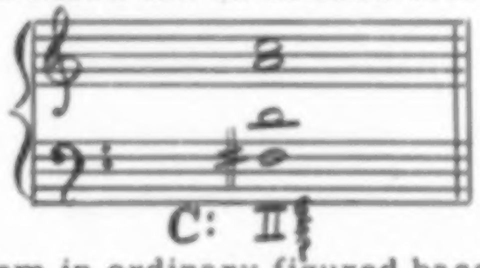
If the root of a root position chord is altered, this is shown by placing the proper accidental before the Roman numeral.



If a chord occurs in an inversion, the same Arabic figuration used for figured bass will be added to the Roman numeral. Note the fourth chord below; if the root is altered, but the chord is inverted, the accidental will not precede the Roman numeral as in root position, but will precede the proper figure.

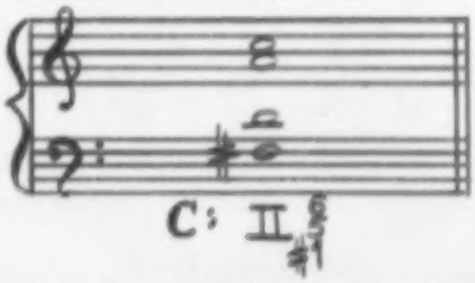


These principles cover all of the possible situations except the case where an inverted chord has an altered note in the bass. For example:



This is no problem in ordinary figured bass, since the whole system is predicated upon the reader seeing the bass part. Hence, the system shows all alterations above the bass part, but shows no alterations in the bass note itself. Sessions[1] recognized this inadequacy and suggested the use of an accidental alone, without a figure, to refer to such an altered bass note. Thus, his chord symbol for the above chord would be II$\substack{6\\5\\\sharp}$. Such a practice, however logical, seems too prone to misinterpretation, since the use of an accidental alone to refer to the third above the bass note has been sanctioned by such long usage in figured bass.

To avoid this ambiguity, this investigator suggests the use of the figure 1 to refer to the bass note in this particular case.[2] The correct figuration for the chord would then be:



6. Modulation

If the points just discussed were the extent of the problem of symbolization, there likely would be better agreement upon them among theorists. There is, however, one very troublesome point which has not been mentioned and which is probably responsible for many of the current differences in approach. What happens, in terms of symbolization, when a composition modulates to another key? The difficulties in symbolizing this arise from the fact that the Roman numeral orientation changes-- because there is a new tonic-- whereas the figured bass continues to operate in relation to the original printed key signature.

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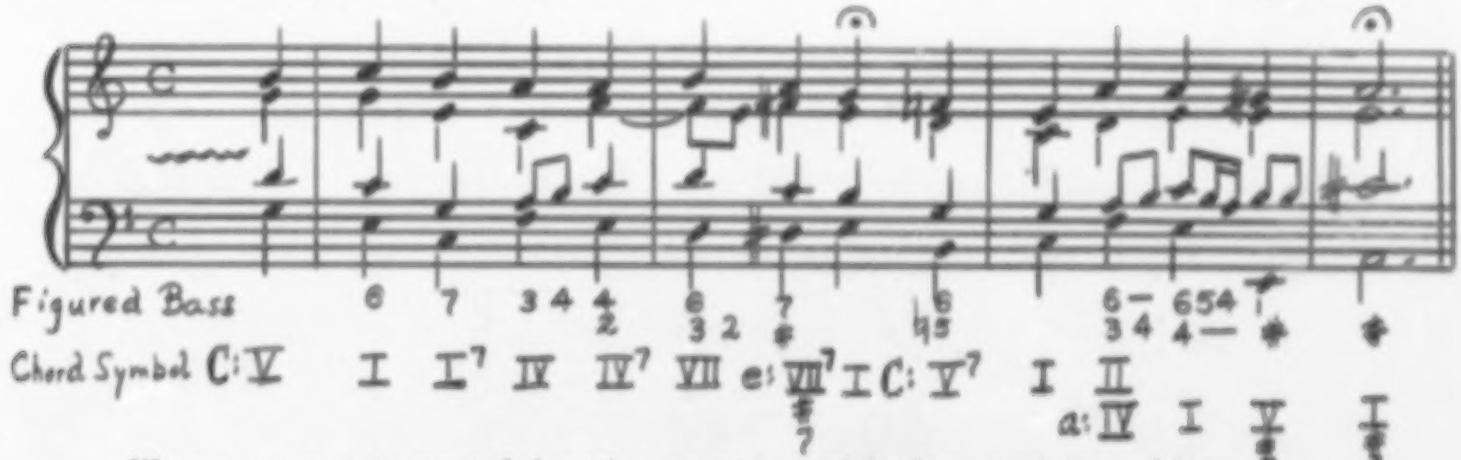
[1] See Harmonic Practice, page 63.

[2] The use of the figure 1 to designate a prime is suggested by C. P. E. Bach in the Essay, page 183-4, No. 22 and 23.

It is this difficulty which has led some theorists, McHose, for example, to separate completely the Roman numeral chord symbol from figured bass. The difficulty with that approach is that it either makes analysis cumbersome, because the two independent systems have to be carried along simultaneously but independently, or it shows an incomplete analysis, if one sees, or speaks of, either system singly. For example, McHose might symbolize the given example as follows:

Von Gott will. (last 2 phrases) Bach



We are not concerend for the moment with the question of how securely these "modulations" are established; even a Schenkerian analysis-- which would show that the intensified C and E are part of the tonic chord-- would only be expressing the modulation in different terms. The chord symbol analysis shows the chord progression clearly enough, but does not take into account the proper inversions shown by the figured bass.

To make the analysis more complete, most theorists seem agreed that a way must be found to combine the chord symbol and figured bass.

My suggestion is to combine the figures--exclusive of nonharmonic decoration--with the chord symbol, using the exact figures and accidentals found in the music. The suggested symbolization for the above example would then be:

C: V I^{6} I^{7} IV IV^{4}_{2} VII^{6}
e: $\mathrm{VII}^{7}_{\substack{\sharp 3\\ \sharp 1}}$ I
C: $\mathrm{V}^{6}_{\natural 5}$ I II^{6}
a: IV^{6} I^{6}_{4} $\mathrm{V}^{\sharp 3}$ $\mathrm{I}^{\sharp 3}$

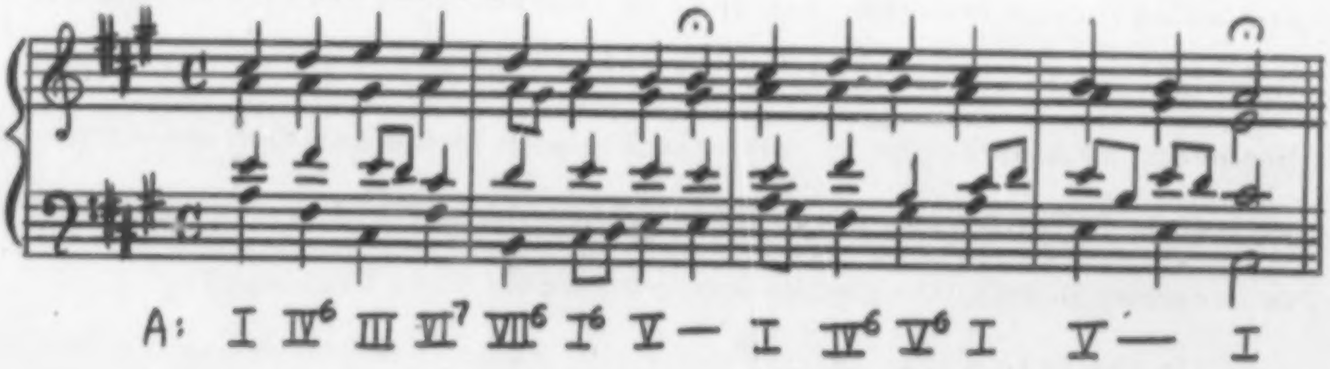
This symbolization is complete; it could be played at the keyboard and all triads, seventh chords, and altered chords would be correctly realized and in proper inversion. Most of the chord symbols are self-evident except for e: $\mathrm{VII}^{7}_{\substack{\sharp 3\\ \sharp 1}}$ and C: $\mathrm{V}^{6}_{\natural 5}$. The figuration of the diminished seventh chord tells that it is built upon the leading tone (VII), that it is a seventh chord in root position (7), that the bass note is raised ($\sharp 1$) and that the third above the bass note is also raised ($\sharp 3$). There are some systems--for example, the one of Kohs--in which a sharp means raised and a flat means lowered, but this, of course, does not apply here. Some theorists might argue that this last alteration ($\sharp 3$) might be interpreted, however, as a direction to raise the F sharp in the key of E minor another half-step. If this were the intention, then the actual accidental necessary to accomplish this (the double sharp 𝄪) would have been used.

In the case of the second chord (C: $\mathrm{V}^{6}_{\natural 5}$), it might be argued that the $\natural 5$ indicated a lowering of the fifth above B, that is, F flat, but again, if this were intended then the figuration would have been $\flat 5$. Since the actual accidentals used in the music are being used for the chord symbol, it is clear that this indicates F natural and that it is only a precautionary accidental, canceling the previous F sharp. This system then has the disadvantage of not showing exactly the same chord symbol for every key or for every modulatory situation; it has, however, every other advantage. And, the fact that a chord function is expressed differently in different modulatory situations may not be so disadvantageous; the differences shown by the symbolizations are precisely those inherent in each musical situation, in other words, the chords in the area of E minor will be shown differently when E minor is a tonal region of, for instance, C major, than they would be shown when E minor is the principal key. Of course, one would have to see, or know, what key signature was operative in any given situation. We will discuss later the use of symbols in an abstract situation where no particular key is indicated.

In order to make clear the symbolization being recommended we will now give some examples, taken from the Bach chorales, with the suggested figuration. The cases are purposely chosen to show how the system would operate in difficult or controversial situations.

1. Diatonic harmony

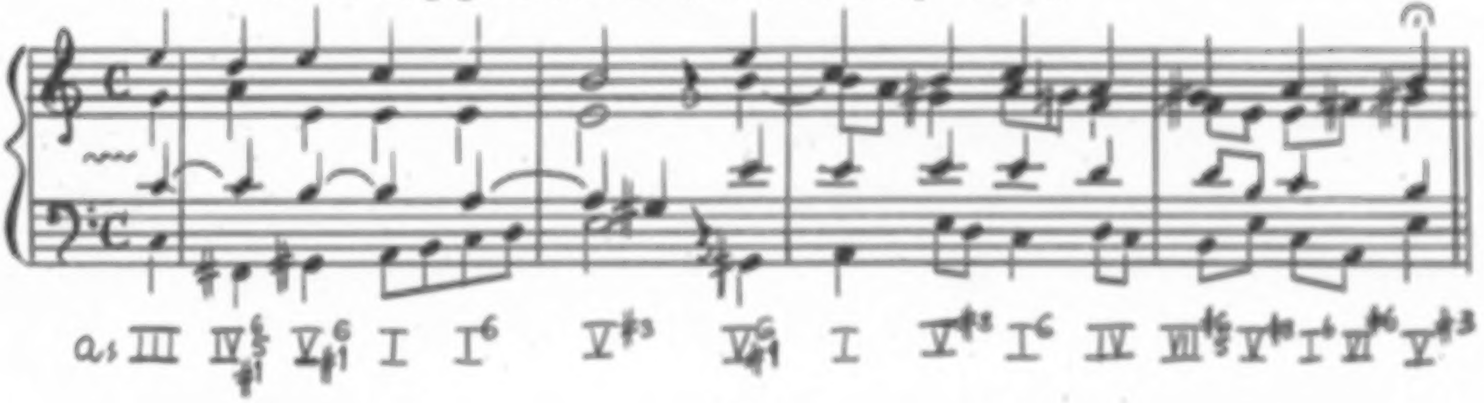
Werde munter, mein Gemüte.



There are no particular problems in this example; it contains primary and secondary triads in root position and first inversion, and a seventh chord.

2. Altered chords

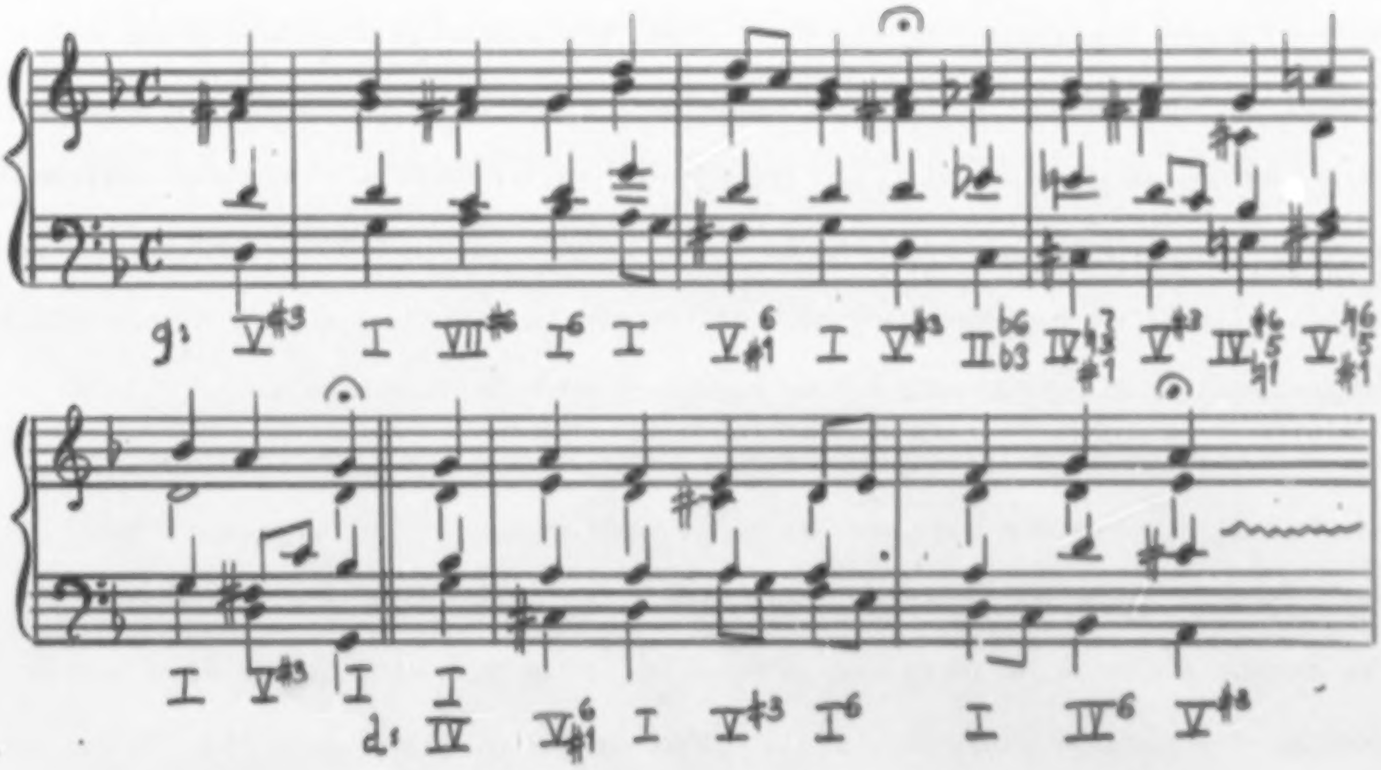
Nun sich der Tag geendet hat (2nd and 3rd phrases)


a: III IV 6 5 #1 V 6 #1 I I6 V#3 V 6 #1 I V#3 I6 IV VII♮6 5 V#3 I VI♮6 V#3

Here the raised sixth and seventh degrees of the minor scale are used; the chord symbol is clear, whether the altered tone is in an upper part or in the bass voice.

3. Modulation

Ach Gott, vom Himmel sieh' darein


g: V#3 I VII#6 I6 I V 6 #1 I V#3 II ♭6 ♭3 IV 7 ♮3 #1 V#3 IV ♮6 5 ♮1 V ♮6 5 #1
I V#3 I I
d: IV V 6 #1 I V#3 I6 I IV6 V#3

The final phrase of this chorale ends in the key of D minor, however, the analysis must begin in the key which is first established, G minor. The problems which this modulation raises occur in chords containing an E flat or an E natural; for example, the Neapolitan sixth chord in the second measure must show the E flat which is not in the printed key signature. In the following chord ($\mathrm{IV}^{7}_{\substack{\natural 3\\ \natural 1}}$), the natural is precautionary, since E natural agrees with the key signature.

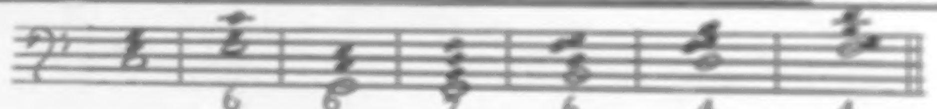
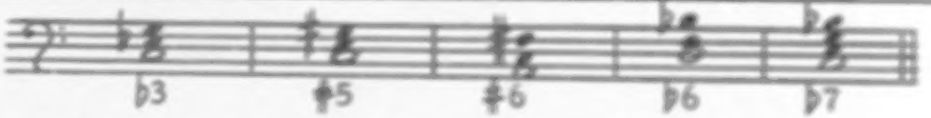
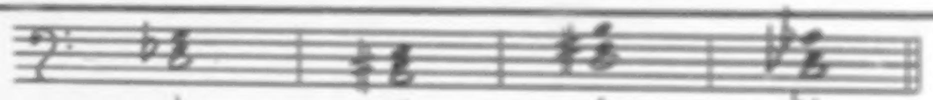
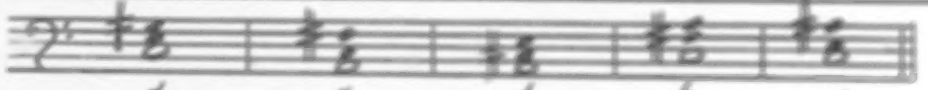
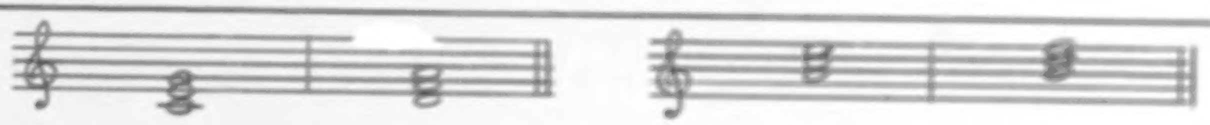
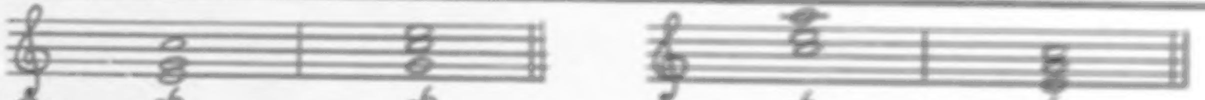
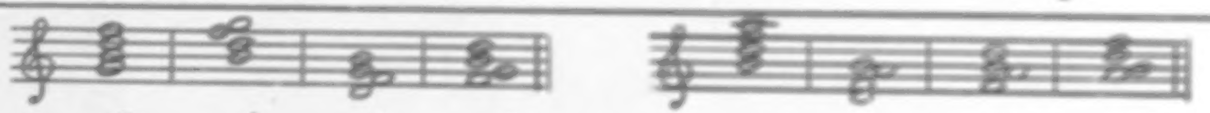
In summary, the chord symbol analysis should show the proper Roman numeral plus whatever figures and accidentals are necessary to show whether the chord is a triad or seventh chord, the proper inversion, and what, if anything, is altered; the figures and accidentals are written in relation to the printed key signature rather than in relation to the imaginary signature of any temporary key.

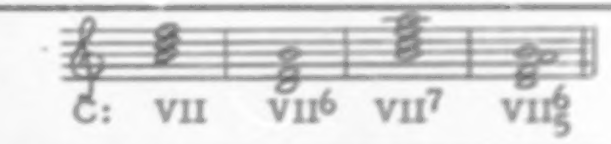
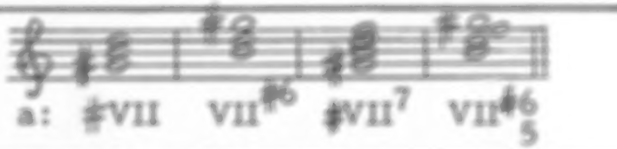
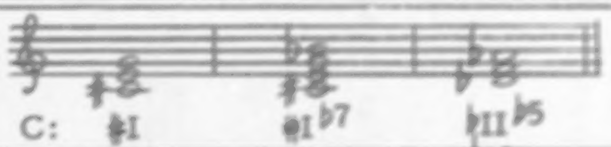
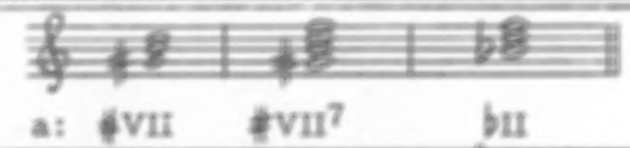
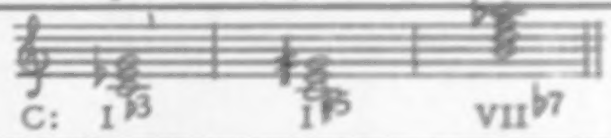
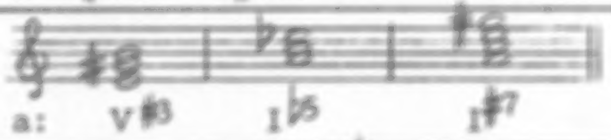
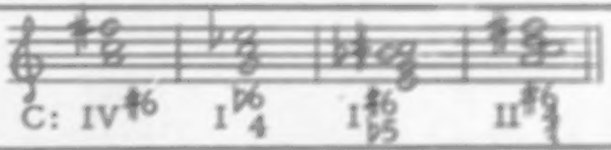
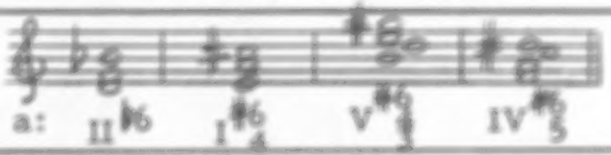
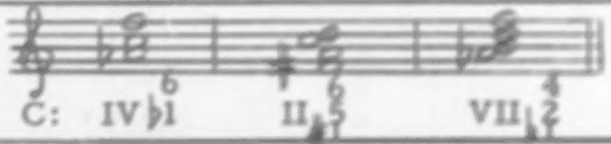
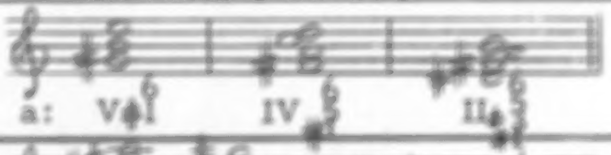
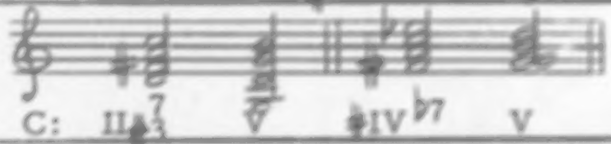
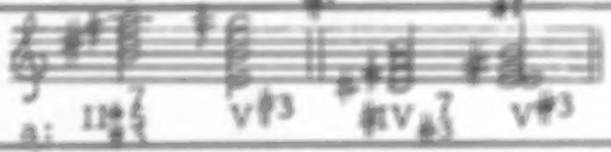
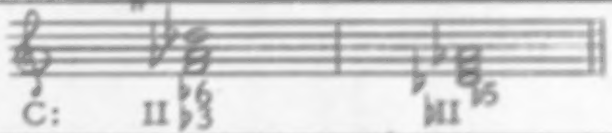
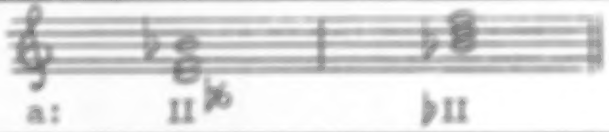
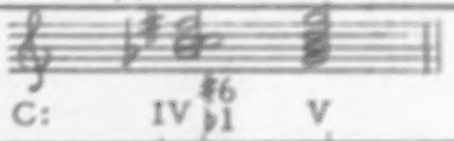
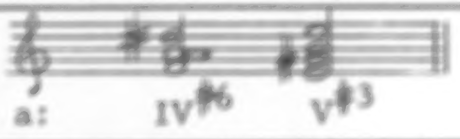
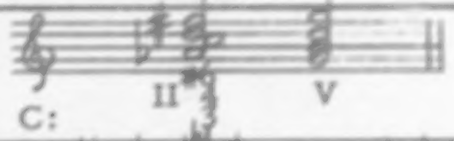
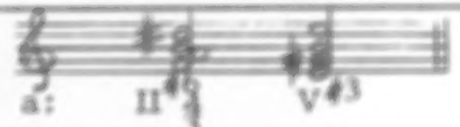
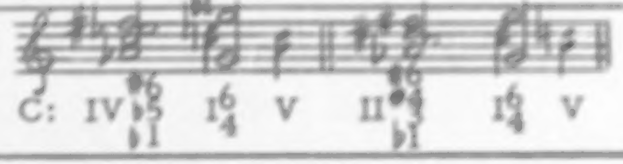
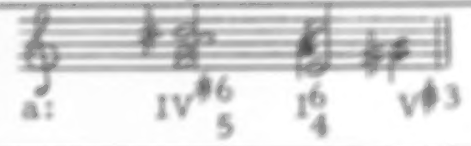
Two exceptional cases might raise questions: Bach sometimes harmonizes a modal melody in a major or minor key, but with the original modal key signature, and there are examples of contemporary composition which are written without a key signature. In the first case, the symbolization will show precisely the difference between the modal scale and Bach's tonal harmonization of it, while, in the second case, the symbolization will be written in relation to the (theoretical) signature of the key of C major. It must be emphasized here, however, that we are speaking of tonal music, and contemporary music which is nontonal or atonal should not be analyzed with tonal symbols.

Sometimes, in talking or writing about music, certain tonal concepts need to be symbolized but there is no printed music or key signature to which the symbols could be referred. In these imaginary, or abstract situations, the symbols should be imagined in relation to the key of C major or A minor, that is, the natural white-key scale. For example, if one gave the chord progression: I $\mathrm{II}^{7}_{\sharp 3}$ I^{6}_{4} V I, with no major key mentioned, the symbols are being expressed in relation to C major.

Finally, there needs to be mentioned the oral expression of this symbolization. The classroom situation necessitates speaking, as well as writing, $\mathrm{II}^{\;7}_{\sharp 3}$. Most often this would be said, "two seven, sharp three." An alternative, which in many cases is clearer, is to say, "supertonic seven, sharp three." The use of the names of the scale degrees, rather than their numbers, clarifies the written distinction between the Roman and Arabic numerals.

4. RECOMMENDED SYMBOLS FOR MUSIC ANALYSIS

Figured Bass		Arabic numerals placed below the bass part, in close position, large to small	 6 $^{6}_{4}$ 7 $^{6}_{5}$ $^{4}_{3}$ $^{4}_{2}$
		Accidentals precede the figure affected	 ♭3 ♯5 ♯6 ♭6 ♭7
		An accidental alone refers to the 3rd above the bass note	 ♭ ♯ $^{6}_{\sharp}$ $^{\flat 6}_{\flat}$
		A diagonal stroke raises a note a chromatic half-step	 $\not{5}$ $\not{6}$ $\not{3}$ $^{6}_{\not{4}}$ $\not{6}$
Key		Major	C: B♭: F♯:
		Minor	a: b♭: f♯:
Modulation			Common chord: C: I VI a: I IV etc. Chromatic or direct: C: I V a: $\text{V}^{\sharp 5}$ I etc.
Chord Symbol	**Roman Numerals**	Large Roman numerals for all types of chord	 C: I II a: I II
		Combined with Arabic numerals from figured bass to show inversions	 C: I^{6} I^{6}_{4} a: I^{6} I^{6}_{4}
		Seventh chords and inversions	 C: V^{7} V^{6}_{5} V^{4}_{3} V^{4}_{2} a: II^{7} II^{6}_{5} II^{4}_{3} II^{4}_{2}

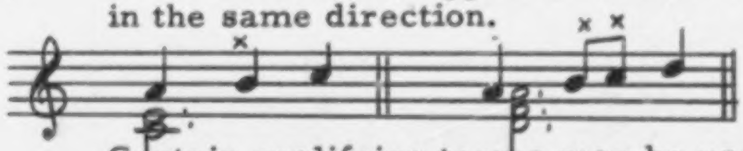
Chord Symbol			
Leading tone chord		 C: VII VII6 VII7 VII6 5	 a: ♯VII VII♯6 ♯VII7 VII♯6 5
Altered Tones			
Altered root of root position chord			 a: ♯VII ♯VII7 ♭II
Altered 3rd, 5th or 7th of a root position chord; correct accidentals used			
Altered tones in inverted chords. Correct accidentals for each Key (or C major and a minor)		 C: IV♯6 I♭6 4 I♯6 ♭5 II♯6 4 3	 a: II♭6 I♯6 4 V♯6 4 3 IV♯6 5
Inverted chord, altered tone in base		 C: IV 6 ♭1 II 6 5 ♯1 VII 4 2 ♭1	 a: V 6 ♮1 IV 6 5 ♯1 II 6 4 3 ♯1
Secondary dominant not used; treated as altered chord		 C: II 7 ♯3 V ♯IV♭7 V	 a: II 7 ♯3 ♯5 V♯3 ♯IV 7 ♯3 V♯3
Neapolitan (6) chord			
Augmented 6th chords	It.		
	Fr.		
	Ger.	 C: IV ♯6 ♭5 ♭1 I6 4 V II ♯6 ♯4 3 ♭1 I6 4 V	 a: IV♯6 5 I6 4 V♯3

C. Nonharmonic Tones

For reasons explained in Chapter VII, the recommended definitions of nonharmonic tones are based primarily upon how the dissonant tone is approached and left and secondarily upon whether or not it is accented.

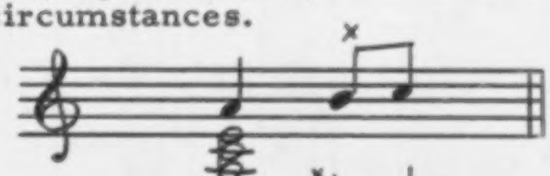
The nine categories which are often found in harmony books will be used as basic names for devices; these will then be qualified or modified as is necessary.

1. Passing tone: a non-chord tone (or tones) appearing between (P. T.) two chord tones, approached and left, by step, in the same direction.

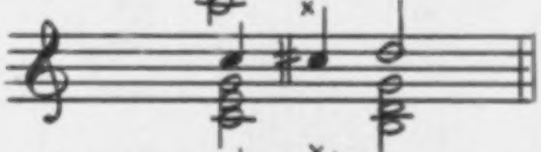


Certain qualifying terms may be used to clarify additional circumstances.

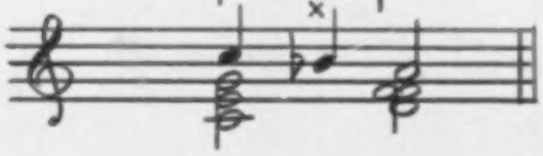
Accented passing tone:



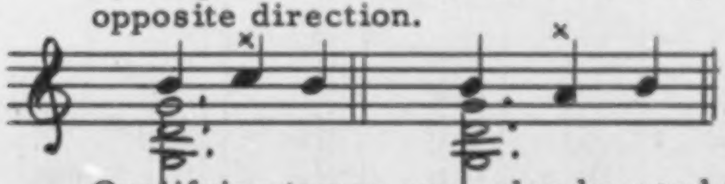
Chromatic passing tone:



Altered passing tone:

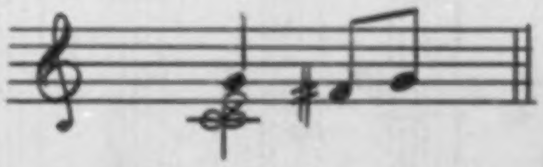


2. Neighboring tone: a non-chord tone appearing between two (N. T.) statements of the same chord tone, approached by step in one direction, returning by step in the opposite direction.

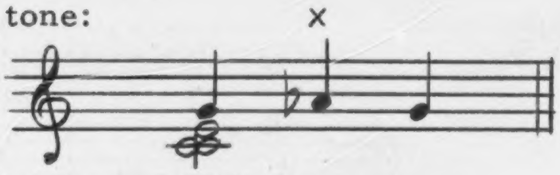


Qualifying terms may also be used to clarify special conditions.

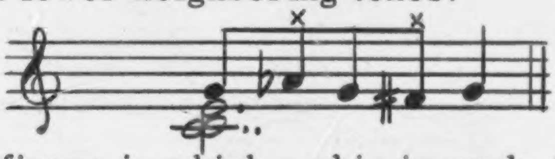
Accented neighboring tone:



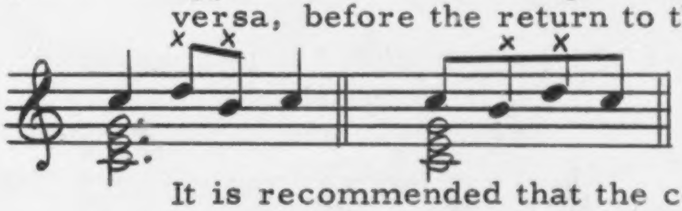
Altered neighboring tone:



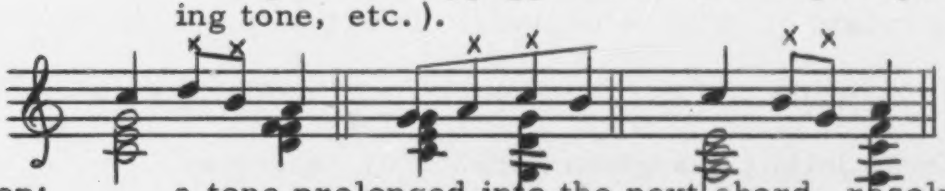
Chromatic upper and lower neighboring tones:



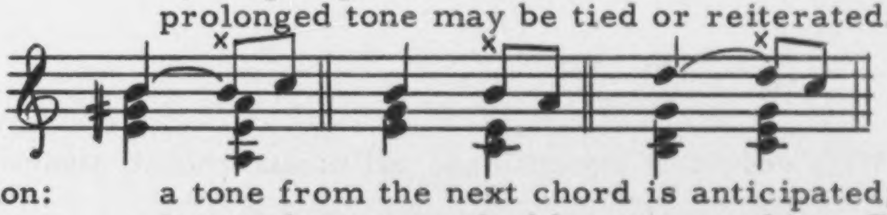
3. **Changing tones:** (Ch. T.) a figure in which a skip is made from the upper to the lower neighboring tone, or vice versa, before the return to the chord tone.



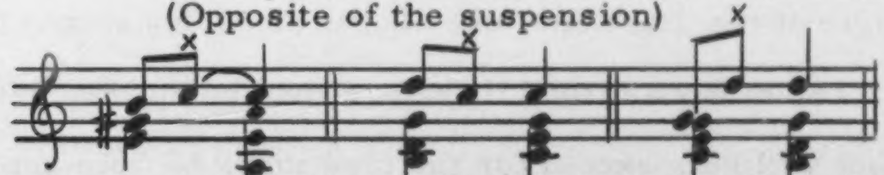
It is recommended that the concept of changing tones be limited to the above figure. Other figures like those following can better be explained by a combination of other concepts (escape tone, appoggiatura, interrupted passing tone, etc.).



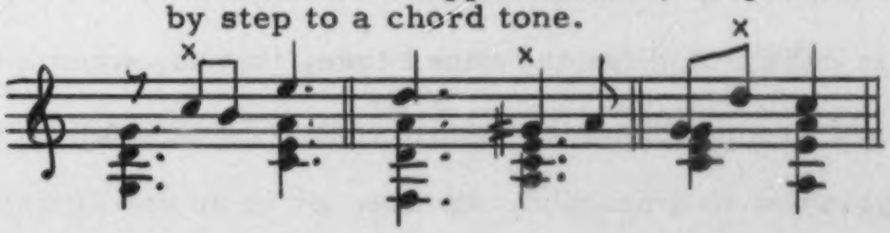
4. **Suspension:** (S.) a tone prolonged into the next chord, resolving by step, up or down, to a chord tone. The prolonged tone may be tied or reiterated.



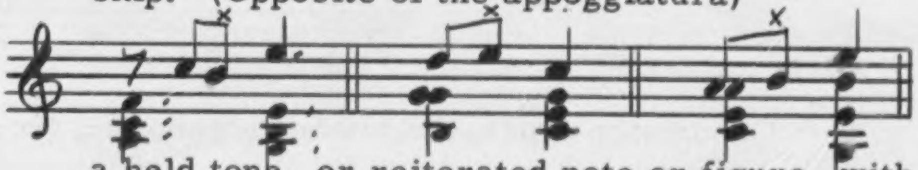
5. **Anticipation:** (An.) a tone from the next chord is anticipated; it may be approached by step or skip. The anticipated tone may be tied or reiterated. (Opposite of the suspension)



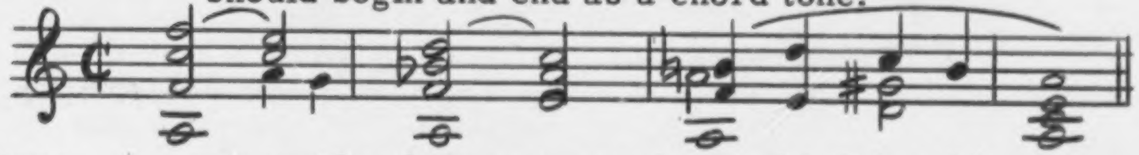
6. **Appoggiatura:** (App.) an unprepared dissonant tone, occurring as an initial note or approached by skip, resolving by step to a chord tone.



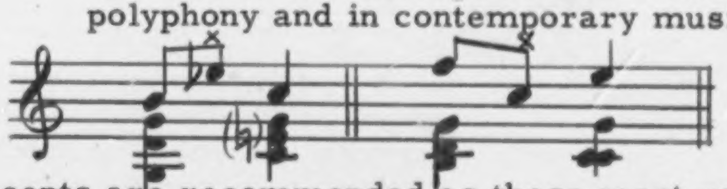
7. Escape tone: (E. T.) a dissonant tone approached by step and left by skip. (Opposite of the appoggiatura)



8. Pedal: (P.) a held tone, or reiterated note or figure, with the progression above or below it; the pedal note should begin and end as a chord tone.



9. Free tone: (F. T.) a non-chord tone approached and left by skip; this is rare in most periods, but occurs in early polyphony and in contemporary music.

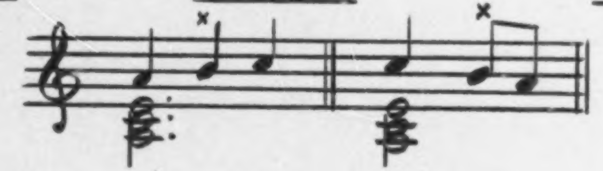
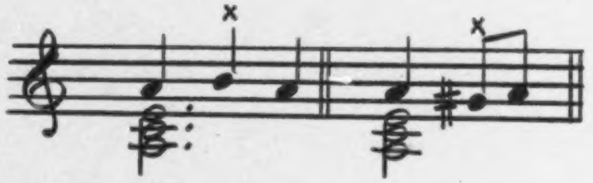
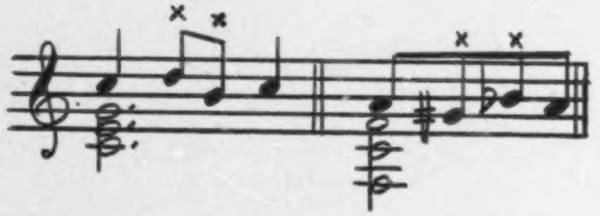
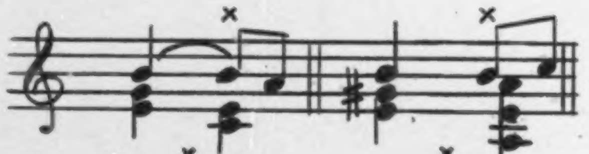
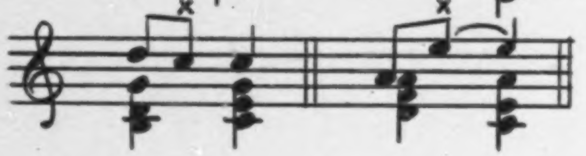


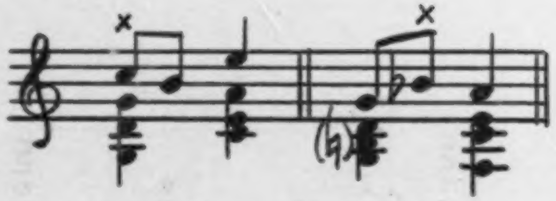
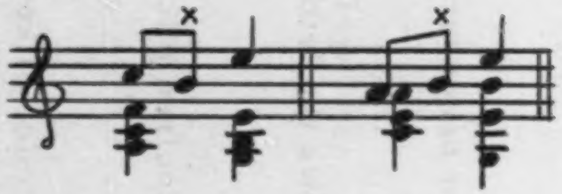
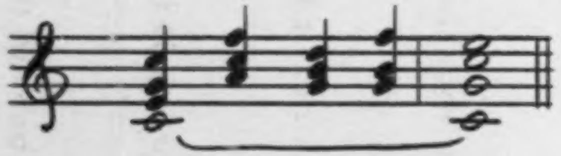
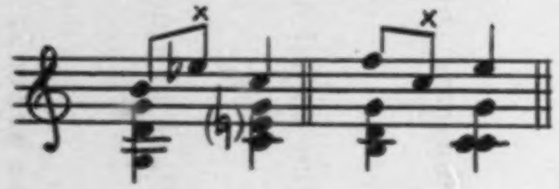
These basic concepts are recommended as those most useful in analyzing music of various periods. In actual practice they will often be found in combination and variation which will sometimes necessitate modifying the literal definitions given here. For example:

With very few exceptions, all nonharmonic situations are made by manipulating the tones which lie adjacent to chord tones. In other words, the logic of the dissonant tone lies in attaching it to a consonant tone by step. The dissonant tone therefore may be approached by leap or left by leap but will not, except for the free tone, be both approached and left by leap. This step-wise attachment can still be seen, even when a nonharmonic tone is substituted for the chord tone, that is, when a nonharmonic tone is attached to another nonharmonic tone. For example, we may write an appoggiatura to a neighboring tone, or to an anticipation.

Such truncations, of course, require a modification of the simple definitions just given, but the history of music is full of these "exceptional" cases--exceptional in that they do not exactly fit some academic rule. The reader will have no difficulty with, "the resolution of a suspension, interrupted by an appoggiatura," so long as the basic concepts are agreed upon and clearly understood.

5. RECOMMENDED DEFINITIONS OF NONHARMONIC TONES

Name	Abbreviation	Example	Approached	Left	Direction of Resolution
Passing tone (May be: Unaccented Accented Chromatic Altered, etc.)	P. T.		By step	By step	Same as approach
Neighboring tone (May be: Unaccented Accented Chromatic Altered, etc.)	N. T.		By step	By step	Opposite to approach
Changing tones (May be: Unaccented Accented Chromatic Altered, etc.)	Ch. T.		By step or skip	By skip or step	Returns to principal tone
Suspension (Tied or reiterated)	S.		By same tone	By step	Up or down
Anticipation (Tied or reiterated)	An.		By step or skip	Repeated tone	Same tone

Appoggiatura (Initial tone Accented Unaccented)	App.		By skip or initial tone	By step	Usually Opposite to approach
Escape tone	E. T.		By step	By skip	Up or down
Pedal	P.		Held tone - member of first and last chords		
Free tone	F. T.		By skip	By skip	Usually Opposite to approach

D. Chord Symbols to be Used in Popular Music

The recommendations given in this section are meant to apply to the symbolization of chords as used in commercially published popular sheet music. No attempt has been made to make these recommendations consistent with those made above concerning symbolization for theory courses, harmony books and analysis. The remarks here are aimed at standardizing those practical symbols which are useful in the performance of jazz or popular commercial music.

The seven basic chord types are to be symbolized as detailed below; these basic sonorities may then be added to or altered according to the principles given under *Additions* and *Alterations*. The chord will be in root position unless another bass note is shown as provided below under *Inversions*.

A capital letter is used to indicate the root (but not necessarily the bass note) of all sonority types.

If an accidental is part of the chord name, it follows the letter: B♭, F♯.

Double sharps and double flats are not used; the desired pitch is written enharmonically.

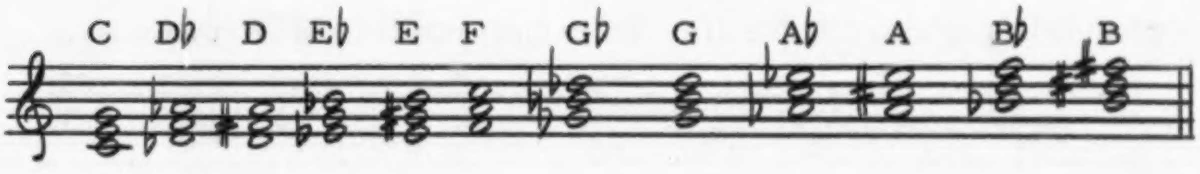
While flats are preferred to sharps, both in the choice of keys and in the spelling of chords, and while the chord spellings given below will most often be used, the possibility of using other chords and other spellings exists, and no doubt these will occur as the musical language becomes more complex, and their need more apparent.

The chord symbols are to be placed immediately above the staff and aligned properly with the notation. Since many publishers have already dropped the ukulele tablature and since its usefulness seems doubtful, its continuation is not recommended.

1. The Basic Chord Types

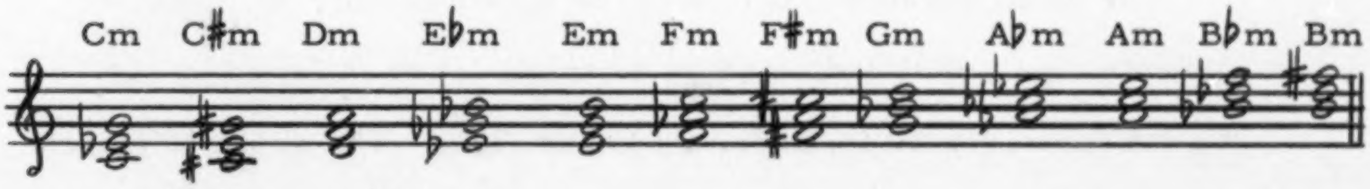
a. The major triad

This is indicated by a capital letter, and major triads will normally occur only in the following spellings:



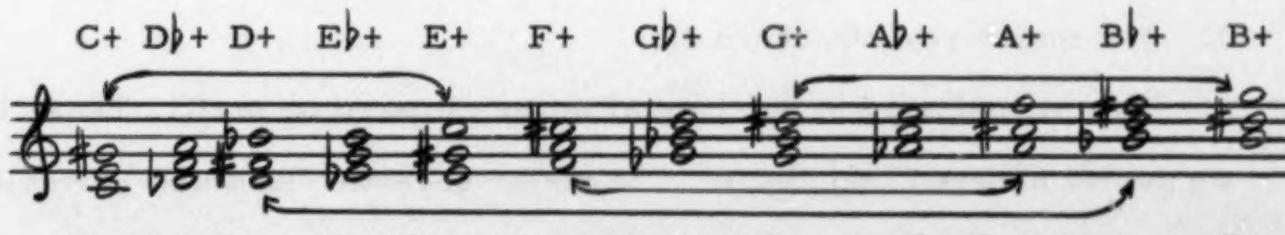
b. The minor triad

This is indicated by a capital letter followed by a small m placed immediately to the right. Minor triads will normally occur in the following spellings:



c. The augmented triad

This is indicated by a capital letter followed by a plus sign (+) placed immediately to the right. Because of notation preferences, augmented triads normally will occur only in the following spellings:

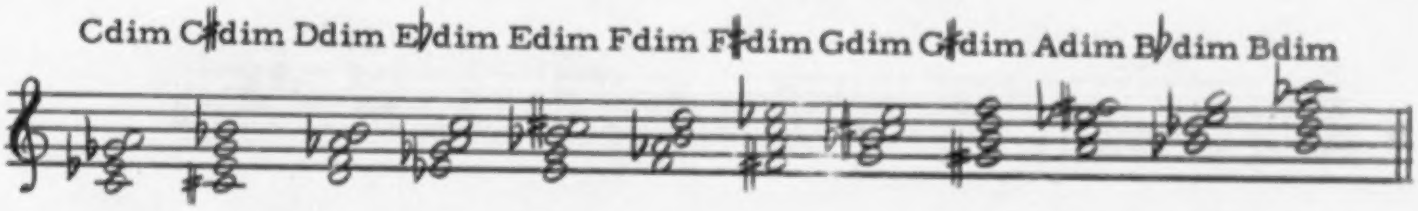


The number of spellings is reduced by four, and enharmonic equivalents are used in order to avoid B♯, E♯, A♯ and F𝄪.

d. The diminished seventh chord

This is indicated by a capital letter followed by the small letters dim placed immediately to the right. No period is used after the dim abbreviation.

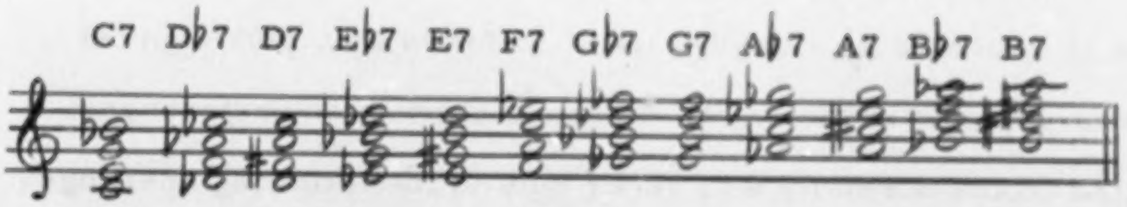
While there are only three different diminished seventh chords in sound, there are at least four spellings of each sound. In order to show the desired bass note, diminished seventh chords will be indicated on each of the twelve pitches; however, chord members will be spelled in the simplest enharmonic way.


Cdim C♯dim Ddim E♭dim Edim Fdim F♯dim Gdim G♯dim Adim B♭dim Bdim

The more common spellings are given above but others may also be found, e.g., D♯dim, A♭dim, etc.

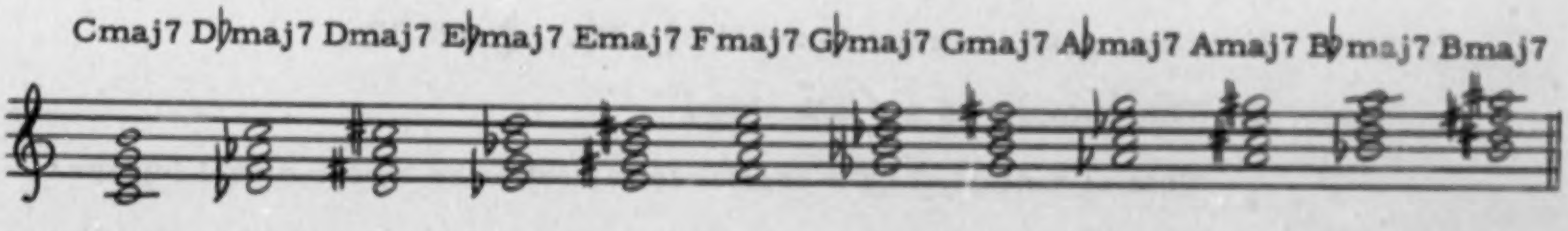
e. The seventh chord

The usual seventh chord is of the major-minor, or dominant seventh type. It is indicated by a capital letter followed by the figure seven placed immediately to the right. The seven is placed on the same level as the letter, not above or below it.


C7 D♭7 D7 E♭7 E7 F7 G♭7 G7 A♭7 A7 B♭7 B7

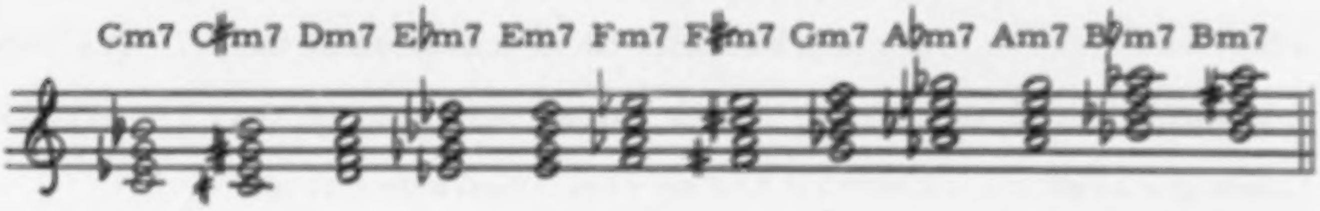
f. The major seventh chord

This is indicated by the capital letter followed by maj7. There is no period between maj and 7. The major seventh chord will normally appear on the same degrees as did the major triad.


Cmaj7 D♭maj7 Dmaj7 E♭maj7 Emaj7 Fmaj7 G♭maj7 Gmaj7 A♭maj7 Amaj7 B♭maj7 Bmaj7

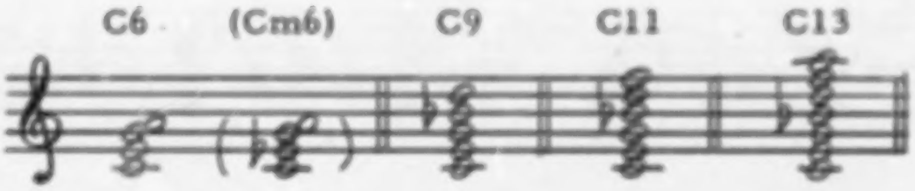
g. The minor seventh chord

This is indicated by the capital letter followed by m7. There is no period between m and 7. The minor seventh chord will normally appear on the same degrees as did the minor triad.



Additions

The seven basic chord types may be modified by added tones. There are four added tone chords which have occurred so frequently that their symbolization is well established; they are symbolized as follows:



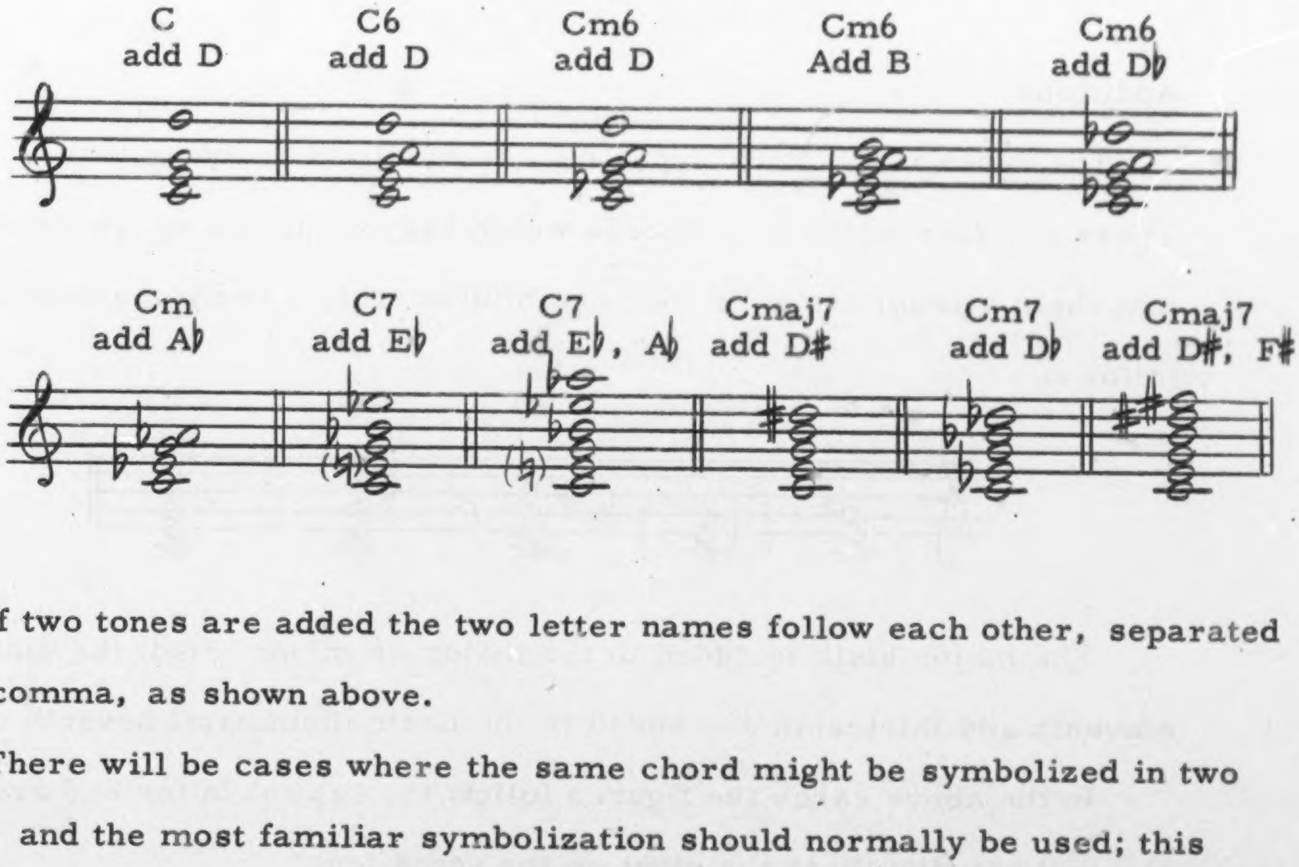
The major sixth is added to the major or minor triad; the ninth, eleventh and thirteenth are added to the basic (dominant) seventh chord.

In the above cases the figures follow the capital letter and are placed immediately to the right on the same level.

All other added tones require a different principle of symbolization. Since the plus sign (+) is already established to indicate a raised tone, it cannot be used to signify the addition of a tone to a chord. The word add has generally been adopted for this purpose. Some publishers place this after the chord symbol (C7 add E♭) and some place it below the basic symbol ($\underset{\text{add E}\flat}{\text{C7}}$); this is also found enclosed in parentheses: C7 (add E♭).

This investigator recommends that this, and certain other modifications, be placed below the basic symbol in order to conserve space and make it easier to align the symbol with the staff notation.

All additions to the basic chord types, other than the four common added-tone chords just given above, will be indicated as below. The added tones are expressed in letter names rather than figures; they are placed below the basic chord symbol and no parentheses are used.



If two tones are added the two letter names follow each other, separated by a comma, as shown above.

There will be cases where the same chord might be symbolized in two ways, and the most familiar symbolization should normally be used; this will be more apparent when we discuss the alterations below.

Alterations

Since most popular songs are written in major keys, and the variety in sonorities is limited, only four alterations are commonly used. These are the augmented fifth, the diminished fifth, the minor ninth, and the augmented eleventh, all made as alterations to the dominant type of chord. Two kinds of symbolization have been used.

a. Plus and minur signs are used to denote a chromatically raised or lowered chord member.

+5 -5 -9 +11

b. Accidentals are placed before the chord member.

♯5 ♭5 ♭9 ♯11

In both cases the indication for the altered note is placed immediately to the right of the basic chord symbol.

The use of the plus and minus signs is recommended for the following reasons:

1. It is the most prevalently used system.

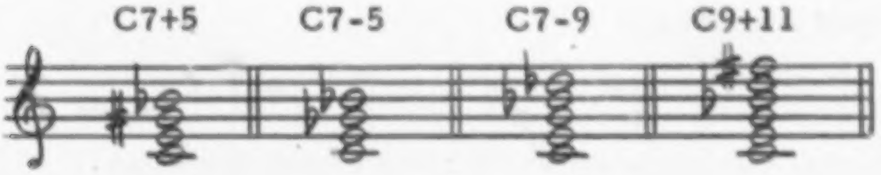
2. Since only four alterations are generally used the system is entirely adequate.

3. This system keeps the chord symbol the same regardless of the accidental used.

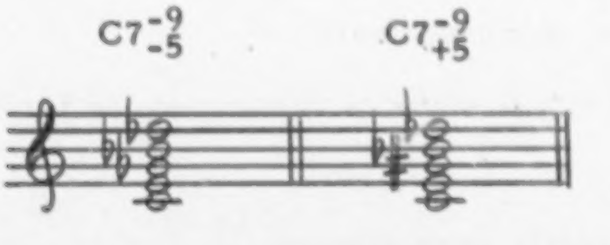
If a great number of altered notes were common the second system of using the proper accidental would no doubt be more explicit. At some future time if the harmonic language of popular music gets very complicated that system might perhaps be better; however, at the present time altered chords occur with only moderate frequency and the plus and minus signs seem quite efficient.

If the plus sign occurs alone this always refers to the fifth of a chord, e.g., C7+ or C9+. However, it is recommended for the sake of clarity, that the plus sign alone be reserved for the augmented triad (C+), and when it is used to show other alterations that it be followed by the proper figure, e.g., C7+5 and C9+5. The plus sign should not be placed between the letter and the figure seven, as: C+7.

The most common altered chords will be symbolized:



If two tones are altered these are usually placed one above the other, as small numbers in order to conserve space.



Many combinations are possible using these four alterations, the seven basic chord types and the added tones.

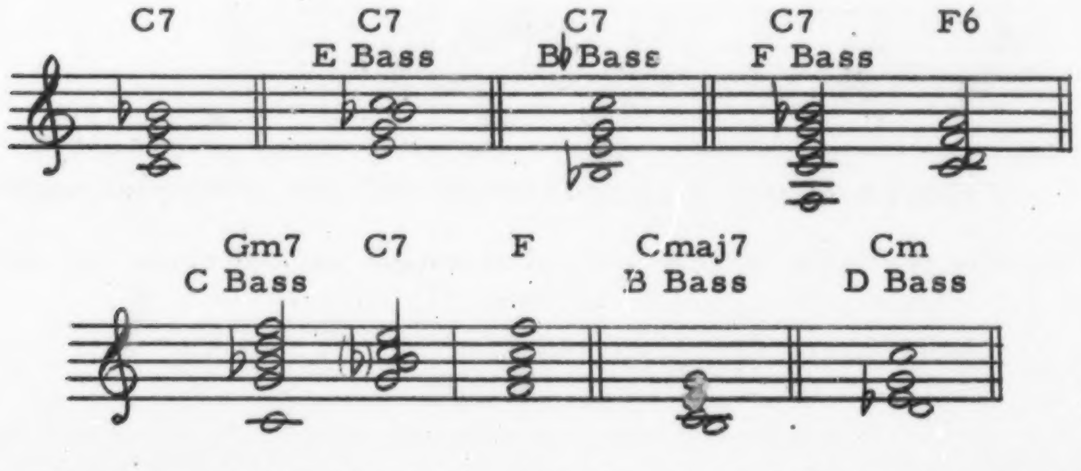
Inversions

The final point to be standardized is a method of showing different bass notes for chords. In traditional theory the inversions of chords are usually shown by the Arabic figures from figured bass (6, $^{6}_{4}$, etc.). This is impractical here for two reasons: the 6 is already well established as a means of indicating an added tone to a chord (C6 or Cm6), and the use of Arabic figures, also already well established, always refers to the chord member, that is, the chord third (3), fifth (5) or seventh (7), etc.

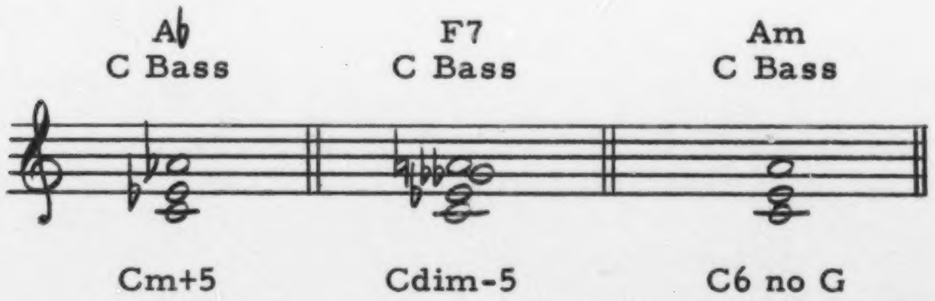
One way to indicate an inversion has already been used by some publishers and seems efficient and unambiguous enough to warrant recommending.

The letter name of the bass note is added below the chord symbol, unless the intended bass note is the same as the basic chord name. In other words, if the root of the chord is to be in the bass no indication is necessary, if some other tone is to be in the bass, this will be shown as indicated below.

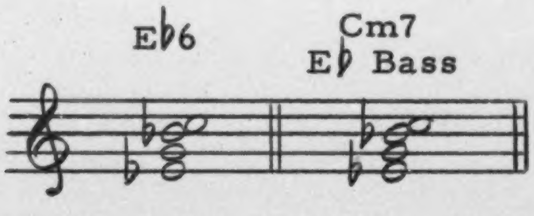
This takes care of, not only chord inversions, but also any other added tones such as pedal in the bass, or what amounts to suspensions in upper parts.


C7
C7
E Bass
C7
B♭Bass
C7
F Bass
F6
Gm7
C Bass
C7
F
Cmaj7
B Bass
Cm
D Bass

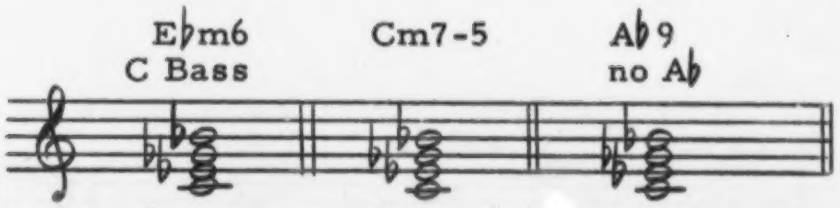
The unusual chords which were found, and shown in a previous chapter, could now be symbolized more logically by this method. They are given again below; the original symbolization is below the staff, the recommended symbol is above.


A♭
C Bass
F7
C Bass
Am
C Bass
Cm+5
Cdim-5
C6 no G

Of course, there are chords which could be symbolized in more than one way; hopefully the simplest and most direct symbolization would be used. For example, the first symbol given below is preferable to the second, both because it is more common, and because it is more succinct.


E♭6
Cm7
E♭ Bass

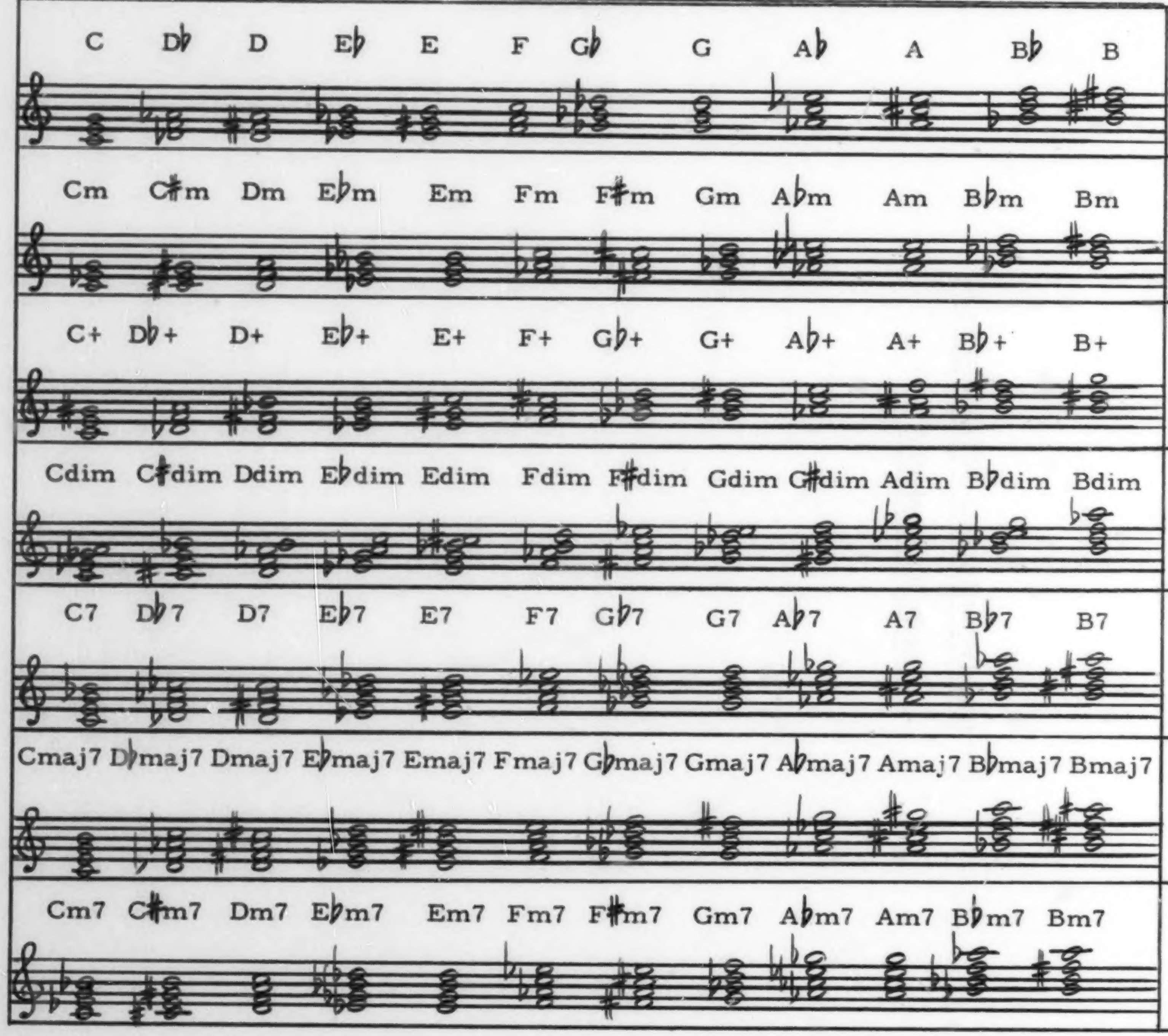
However, in the case of the following chord the preference is not so clear.



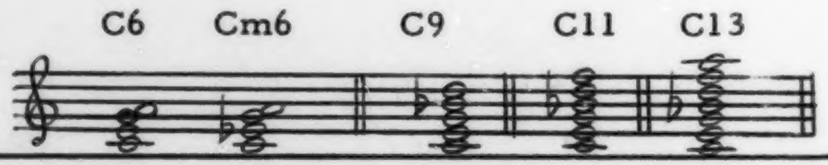
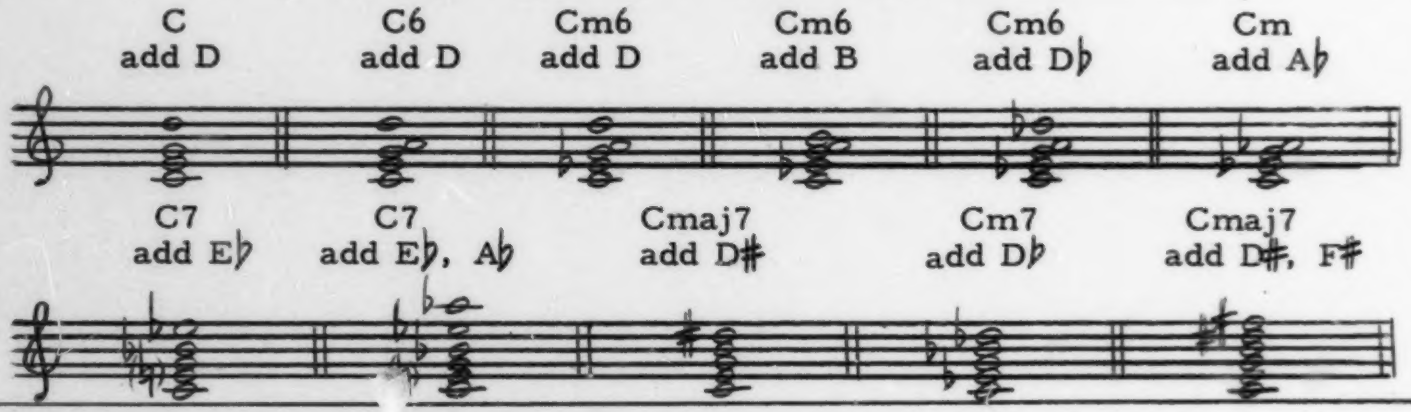
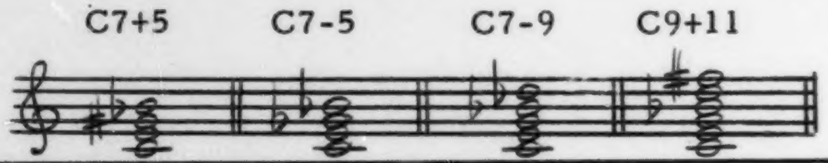
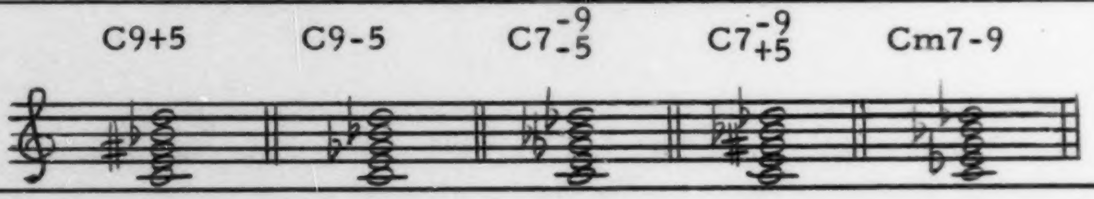
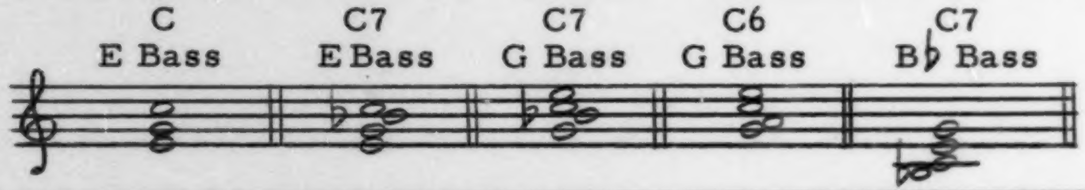
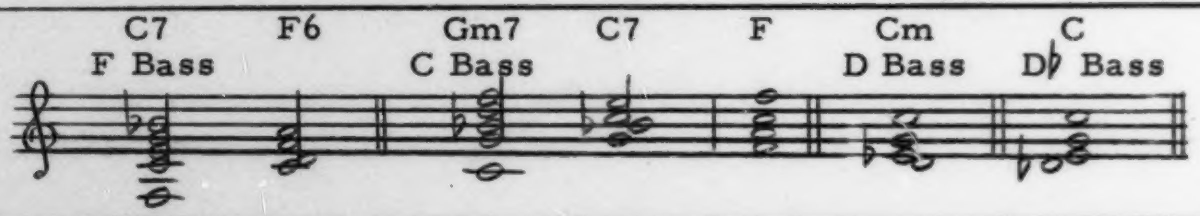
Experience and trial-and-error with the principles outlined here, should clarify the most efficient symbolization in borderline or difficult cases.

6. RECOMMENDED SYMBOLS FOR POPULAR MUSIC

6. RECOMMENDED SYMBOLS FOR POPULAR MUSIC



	BASIC CHORD SYMBOLS
C D♭ D E♭ E F G♭ G A♭ A B♭ B	Major triad
Cm C♯m Dm E♭m Em Fm F♯m Gm A♭m Am B♭m Bm	Minor triad
C+ D♭+ D+ E♭+ E+ F+ G♭+ G+ A♭+ A+ B♭+ B+	Augmented triad
Cdim C♯dim Ddim E♭dim Edim Fdim F♯dim Gdim G♯dim Adim B♭dim Bdim	Diminished Chord
C7 D♭7 D7 E♭7 E7 F7 G♭7 G7 A♭7 A7 B♭7 B7	Seventh Chord
Cmaj7 D♭maj7 Dmaj7 E♭maj7 Emaj7 Fmaj7 G♭maj7 Gmaj7 A♭maj7 Amaj7 B♭maj7 Bmaj7	Major Seventh Chord
Cm7 C♯m7 Dm7 E♭m7 Em7 Fm7 F♯m7 Gm7 A♭m7 Am7 B♭m7 Bm7	Minor Seventh Chord

ADDITIONS	Most frequent added-tone chords	 C6 Cm6 C9 C11 C13
	Others	 C add D C6 add D Cm6 add D Cm6 add B Cm6 add D♭ Cm add A♭ C7 add E♭ C7 add E♭, A♭ Cmaj7 add D♯ Cm7 add D♭ Cmaj7 add D♯, F♯
ALTERATIONS	Most frequent alterations	 C7+5 C7-5 C7-9 C9+11
	Others	 C9+5 C9-5 $C7^{-9}_{-5}$ $C7^{-9}_{+5}$ Cm7-9
BASS NOTES	Inversions	 C E Bass C7 E Bass C7 G Bass C6 G Bass C7 B♭ Bass
	Others	 C7 F Bass F6 Gm7 C Bass C7 F Cm D Bass C D♭ Bass

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AUTHOR'S POSTSCRIPT

In conclusion it may be well to state what the author hopes will be the result of this investigation. It would be quite unrealistic to suppose that the authors and publishers of the books here investigated would in any way implement the adoption of the study's recommendations, since, while there is some general agreement with every book studied, there is no complete agreement with any book studied. It is to the teachers of music theory, particularly college teachers, that these recommendations are addressed in the hope that their use may eventually lead to some real consensus of opinion.

I am well aware that the analytic symbolization covered here comes, perhaps, at the end of an era and that, for the immediate future the importance of the pseudo-Schenker graph cannot be overestimated. Nevertheless, the concepts studied here will remain a part of the musicological investigations of tonal music for some time to come. Hopefully, other investigators will eventually make similar studies of current notation practices and other general terminology.

No attempt has been made to evaluate the relative worth or usefulness of the various textbooks used as a source of symbolization in this study. The author feels that such an evaluation would have been, not only irrelevant to the basic purpose of the investigation, but highly improper. Therefore, except in matters relating to symbolization, the author has tried scrupulously to refrain from expressing any personal opinion about an author's philosophy or the pedagogical effectiveness of a particular book.

Finally, the author wishes to apologize in advance for whatever errors may appear in this work. The value of a study such as this is precisely related to its accuracy. While every effort has been made to achieve a meticulously accurate text, human frailty being what it is, the author is well aware that such perfection is entirely unlikely.

George Thaddeus Jones
Washington, D. C.
December 15, 1964

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APPENDIX

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List of schools submitting original material for study. This material was duplicated by ditto, mimeograph, multilith, photo-offset or printed.

School	Author	Title
Arizona State University	Putnik & Lamm	Music Theory in Outline Form
Baldwin-Wallace College	Bullis	Harmonic Forms
Birmingham-Southern College	Baxter	Basic Studies in Music
Boston Conservatory of Music	Alphin	Musical Theory (Fundamentals)
Bucknell University	Cook & McRae	Essentials of Harmonic Practice
Depauw University	White & Grubb	Freshman Theory Sophomore Theory
East Carolina College	---	Syllabus for Freshman Theory
Hamline University	Harris	18th-19th Century Harmony Analysis Symbols
Hollins College	Diercks	Syllabus
Iowa, University of	Turner	A Proposal For a Stabilized Nonchord Tone Nomenclature
McNeese State College	Steiner	How to Read Music
Miami, University of	Ashe	Traditional Harmonic Practice
Minnesota, University of	Oberg	Syllabus
Nebraska, University of	Haggh	Syllabus
Phillips University	Ulrich	Syllabus
Southeastern Louisiana College	American Standards Association	Acoustical Terminology
Syracuse University	George	Altered Chords
Washington University	Gerdine	Techniques of Listening
Washington, University of	Staff	Syllabus
Washington State University	Scott	Harmony

On the following pages are sample copies of all letters and questionnaires which were sent out in connection with this study.

The Catholic University of America
Washington 17, D. C.

SIC DEPARTMENT

- Copy of 1st Letter -

May 15, 1963

To members of the National Association of Schools of Music

Dear Colleague:

Through the Cooperative Research Program of the Office of Education, U. S. Department of Health, Education and Welfare I have received a grant to make a study to be known as, Symbols Used in Music Analysis.

As you know, practically every textbook on music theory or harmony devises its own set of special symbols to be used in discussing or analyzing music and there is little agreement between them on many points. The purposes of this study will be:

1. To discover and catalog the symbols used in theory textbooks which are in common use in the United States.
2. To make recommendations for a standardized symbolization for general use.

To make the study valid we need the participation of each school in the NASM. If you will fill out and return the enclosed questionnaire, a copy of the report of this study will be sent to your school after November 15, 1964.

Thanking you for your kind cooperation, I am

Sincerely yours,

George Thaddeus Jones

George Thaddeus Jones,
Professor of Music

- Copy of Questionnaire -

Symbols Used in Music Analysis

Name of the School, College or University: ____________________________
Address: ____________________________
____

Person to whom the final report of this study is to be mailed: ____________________________

1. Please list the textbooks which you currently use in the general area of music theory or harmony.

Author	Title	Publisher

2. If your school has developed its own material which is duplicated and available, please send me a copy and check below:

(a) Duplicated material if being mailed to you. (Please check).
(b) If there is a charge for this material please send a bill to the address below.

3. If your school has developed its own material which must be ordered from a particular publisher, agent or campus store please indicate this below.

Titles:

To be ordered from:

Please return this questionnaire in the enclosed envelope. Please send all materials to:

Dr. George Thaddeus Jones
Music Department
The Catholic University of America
Washington 17, D. C.

The Catholic University of America
Washington 17, D. C.

SIC DEPARTMENT

- Copy of 2nd Letter - October 1, 1963

To: Members of the National Association of
Schools of Music

Dear Colleague:

Last June a letter was sent to your school asking your cooperation in a study, Symbols Used in Music Analysis. This study is supported by a grant from the Cooperative Research Program of the Office of Education, United States Department of Health, Education and Welfare.

The purpose of the study is:

1. To discover and catalog the symbols used in theory textbooks which are in common use in the United States.
2. To make recommendations for a standardized symbolization for general use.

Since we have had no return from you, I am sure the form was misplaced in the confusion which always attends the closing of school. If you will fill out and return this questionnaire in the enclosed envelope, I will be glad to send you a copy of the final report.

Thanking you for your kind cooperation, I am

Sincerely yours,

George Thaddeus Jones

George Thaddeus Jones,
Professor of Music

The Catholic University of America
Washington 17, D. C.

MUSIC DEPARTMENT

- Copy of Letter to Publishers - September 22, 1963

Music Pub. Hold Corp.
619 West 54th Street
New York 19, New York

Gentlemen:

Through the Cooperative Research Program of the Office of Education, United States Department of Health, Education and Welfare I have received a grant to make a study to be known as, Symbols Used in Music Analysis. While most of this study will deal with conventional music textbooks commonly used in the United States, one of the chapters will concern the chord symbols used in published popular sheet music and jazz.

As a leading publisher of popular music, would you participate in this study by sending me six recent popular songs of your publication?

If you will send me this material for analysis, I will be happy to send you a copy of the final report of the study after November 15, 1964.

Thanking you for your kind cooperation, I am

Sincerely yours,

George Thaddeus Jones

George Thaddeus Jones,
Professor of Music

The Catholic University of America
Washington 17, D. C.

SIC DEPARTMENT

- Copy of Letter to Organization - October 1, 1963

To: Learned Societies, Foundations and
Organizations in the field of music.

Dear Colleague:

As some of you already know, I am in the process of making a study to be known as Symbols Used in Music Analysis. This study is supported by a grant from the Cooperative Research Program of the Office of Education, United States Department of Health, Education and Welfare.

The purpose of the study will be:

1. To discover and catalog the symbols used in theory textbooks which are in common use in the United States.
2. To make recommendations for a standardized symbolization for general use.

Many times interested parties only become aware of studies like this after they are completed, and therefore have no opportunity to participate in them or to voice an opinion about them. It is for this reason that I am writing to you at this time to acquaint you with the project and to ask that your organization, or you as an individual, communicate to me any feelings which you may have upon this subject. Every opinion and comment will receive most careful consideration.

To achieve any standardization in this field will be most difficult at best, because of the vested commercial interests in published books. If any progress is made it will be because scholarly organizations desire and support this.

I am aware that the final, specific recommendations in this report must be my own, but I would be most grateful to you for any suggestions which you would care to make.

Very truly yours,

George Thaddeus Jones

George Thaddeus Jones,
Professor of Music

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